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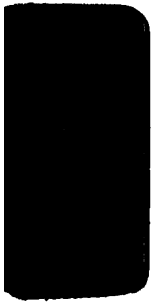

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PROCEEDINGS

OF THE

NEW JERSEY

State Dental Society

FOR THE YEARS

1875-6-7.

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1878.

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NEW JERSEY STATE DENTAL SOCIETY.

MINUTES, 1875.

The New Jersey State Dental Society held its Fifth Annual Meeting at Long Branch, July 6th, 7th and 8th, President Brown, of Mount Holly, presiding. Drs. L. S. Marsh, H. E. Parke, D. H. Thickston, Wm. E. Francis, Chas. W. Meloney, W. W. Dorland and C. M. Merritt were elected new members. The Board of Examiners reported that, during the year past, they examined and gave certificates to practice to the following: Drs. Wm. E. Francis, F. J. Leonard, A. L. Strecher, and R. J. Reed, after payment of fee.

The session of Wednesday opened with the President's address, from which we make the following extracts. Giving an interesting resume of the year, he spoke of amalgam as having renewed attention given to its use by careful tests and experiments. That amalgam, properly prepared and used, will preserve a tooth for years, is beyond a doubt; improperly used, it is worse than useless. Celluloid has taken great strides the past year in public favor, and is fast superseding the use of rubber. Beautiful in color, strong in texture, easy of manipulation, it bids fair to take the place of all other materials as a base for artificial teeth. It appears to be just what we wanted to release us from the obnoxious rubber company. I think every dentist who has learned to use it will never go back to rubber. Our law regulating the practice of dentistry is working well. Though being much more stringent than the New York law, yet no fault has been found in its workings. He urged upon the Society the adoption of a rule prohibiting any member of the Society from receiving a student for a less period than three years, and making it obligatory upon the student to attend two courses of lectures, and graduate at some dental college. He would advise the passage of a resolution that after a period of three years, no one should be received as a member who has not complied with the same. The address was well received, and elicited considerable discussion, nearly all coinciding.

The first essay, by Dr. T. B. Welch, of Vineland, was then read, and well received.

Some hurry through their dental operations from selfish motives. They are in haste to be rich, and therefore anxious to make every hour of labor count the greatest number of dollars income. Nearly all such come to grief, as they should. Some who are naturally nervous and excitable, are not aware of a want of care—it being a misfortune, and the sooner they overcome this weakness, the better workmen they will be. Others hurry from pride to be smart—continually boasting of how many teeth they can fill in an hour, or how many teeth they can extract in a minute. This is foolish. We should work as rapidly as we can consistently with accuracy. The greatest pride of the true workman is in the perfection of his work, and he is generally modest in his claim. Let our reputation speak of honor, dignity and success. The essay was well discussed, coinciding with the views of most.

Dr. C. S. Stockton, of Newark, followed with an essay on Dental Education, of which the following is a synopsis:

The first point was the extreme haste of the profession in manufacturing dentists of their students. The early and thorough education of one who proposes to enter the profession of dentistry, is of the greatest importance. The eagerness of the American people to enter business life, and the haste to get rich, are the glory and vice of America. The uneducated man and dentist goes out into the world, and is alone. Letters, philosophy and the sciences have no interest to him, and their delights to him will forever remain closed. He claims that he is not appreciated at his true worth. It is his own fault; for if he enter the circle of the educated, he must be educated himself to their standard. There are so many men not blessed with the best qualifications, and the number has been so increased, that the time has come that societies like this should make their voices heard. I would have no one commence the practice of dentistry at this day unless he be a graduate of the Dental College. I would have no one enter a dental college unless he has spent two years in the office of a competent practitioner. Colleges are blamed for the way they make dentists. In a measure they are unjustly censured. The college has done more for the profession than all other means combined. Young men are taken by some of our practitioners, sent at once to college, without any previous instruction, and the college, in eight months, is expected to make thorough dentists of them. Let us cherish our State Society,

as I know of no better way of promoting dental education in New Jersey than by faithful attendance of its sessions. What possible ambition to high deeds can a man have who lives wholly within himself. Let us, then, as our means to higher professional attainments, cherish this Association, educate each other and the dentists of New Jersey.

Dr. Welch agreed with Dr. Stockton.

Dr. Hayhurst considered that all general laws bore hard in certain cases; but better it be so than to open the flood-gates to incompetency.

Dr. Kingsley thinks the pupil should study three years, and pass through college, as the paper recommends.

Dr. J. R. Goble differed entirely, and thought that it should not be obligatory upon students to attend dental colleges, and spoke of the incompetency of graduates for every-day practical work upon leaving college, they wishing to perform all operations in the manner and way they did in the college. He denounced the system of selling diplomas, having proof of a certain college granting a diploma which the New York Board of Censors refused to grant, because the candidate was wholly incompetent. The diploma of the college could not, in his estimation, guarantee a fitness to practice.

Dr. Hanks defended the college system, but condemned its abuse, and thought the present system of medical and dental colleges wrong.

Dr. Hayhurst, ex-College Professor, cited the thoroughness of the examinations, and did not consider the Board of Censors had as good an opportunity and the time at command as a college faculty.

Dr. C. A. Meeker recommends that the examinations of the Board of Censors be so thorough that the diploma of the Society will be an honor to hold, though the candidate holds a degree of D. D. S. Also, as Dr. Stockton says, to work for the elevation, education, and character of the Society.

After considerable discussion by a number of others, the subject was closed.

Dr. Geo. D. H. Perine, of New York, by special request, spoke at some length upon the use of the Galvano-Cautery Battery for oral surgery. Dr. Perine said that there was advance in all departments of science, particularly so in our own department, dental surgery; he claims that the introduction of the cautery (he being the first person who has applied that particular cautery in oral surgery), *is the advance of the age*, and he strongly recommends its use. If the cautery be

employed for obtunding sensitive dentine, he would advise its application to be made with great care, and only in cases where the instrument can be applied directly to the tooth to be operated upon, guarding the instrument from contact with any other tooth, the action will be instantaneous and effectual. Doctor Perrine illustrated the use of the battery for operations in oral surgery, and presented the instruments he uses. The advantages he set forth are, that the operation is instantaneous, painless, and without shock to the body, which it does not in any degree affect unpleasantly; the application is easy, free from hemorrhage (which is of great moment in surgical operations in the mouth), and, finally, the reparative process is rapid. Doctor Perine freely gives his thoughts and experiences to his professional brethren, and strongly recommends the use of the battery for oral surgery.

Dr. J. R. Goble, of Hoboken, read a highly interesting paper on the cause and cure of the absorption of the alveolar process, taking the ground that local irritation was the primary cause, preceded by salivary calcus, diseased teeth, etc., the cure of which was to remove the irritation with delicate instruments, keeping the necks free and well polished, and recommending the use of a weak solution of chlorate of potash. He deprecated the custom of so much scrubbing the teeth, citing numerous instances of absorption and denuding of the enamel.

Prof. Abbott, of New York, said he was well pleased with Dr. Goble's remarks, and agreed with the doctor in every particular, and hoped all dentists would instruct their patients in the use of the tooth-brush. He also, by special request, spoke of the use of salicylic acid, for use in diseases of the mouth, it having strong antiseptic properties, and being perfectly harmless.

Dr. Kingsley and others recommended the use of aconite and iodine saturated solution for inflammation, and for use after filling new cavities.

Subject passed.

On motion of Dr. C. S. Stockton, the President was authorized to welcome to New Jersey, the American Dental Convention, which meets at Long Branch in August. Adjourned.

Session of July 8th.

The invention of Dr. Chevaliers, in regard to an improvement in metallic bases, was delegated to a committee of Drs. Stockton, Pinny and Meeker, to report at next meeting.

The *Dental Luminary*, a small pamphlet designed for distribution by dentists among their patients, which would enable

the reader to discriminate a good from an inferior dentist. The committee spoke very highly of it, and it was ordered printed by the Society, provided enough copies from individual members would be ordered to make it practicable.

Atlantic City was decided upon as the next place of meeting.

Drs. Welch, Goble, Hayhurst and Stockton were elected delegates to the New York State Dental Society.

Dr. J. Hayhurst next spoke on the best method of inserting partial plates. In taking the impression, plaster was considered the best article. The contact by the plate on the natural teeth was not by him considered necessary; the atmospheric pressure being sufficient; when the impression was perfect, everything depended in making a perfect fit on that.

Dr. Dibble thought an air-chamber not necessary; made all his plates without them.

Dr. F. W. Barlow gave his method of using wax and plaster in difficult under cuts.

Dr. Meeker asked the essayist the best place to put the air-chamber? The doctor thought, in a high roof, the end of the plate, and in a flat roof near the centre; deprecated the custom of having so many angles to them.

Dr. Stockton considered gold the best for partial and continuous gum for full sets. Subject closed.

Dr. E. F. Hanks, of Jersey City, then read the following essay on amalgam:

After Dr. Bogue's able and exceedingly thorough exposition of amalgams, under every condition that we may be called upon to use them, it seems to me presumption to say anything on the subject unless one can say something new. But I have the consolation that I am not alone in this, for so long as dental societies exist, just so long will we be called upon to give a re-hash of what has been said and done before.

When I took the subject, I intended to go much more fully into this matter than I have, until I saw Dr. Bogue's article, which covered the ground so completely and much more scientifically than I ever hoped to do, that I have contented myself with making only a few experiments.

I would suggest before all things that we be candid in what we say in the discussion that may follow, and say exactly what we mean and not exactly what we do not mean on this important subject. Time and time again have leading men in the profession denounced before dental societies the use of amalgam in any manner or under any circumstances, returning home to use it privately in their daily practice. Amalgam has

simply been unfashionable, and the young men with reputations to make have been warned that they could not afford to speak favorably of it. Now all that is changed. Amalgam has become the rage. The journals as well as the teeth are filled with it, and voluminous papers are read before learned societies about it. While amalgam was under the ban, tons of it were made, but no one used it. The manufacturers said they sold it to the dental depots; the depots said the dentists bought it; but the dentists said that they never used it. [Laughter.] If this was true, what a tremendous stock some of us must have, now that amalgam has grown to be so popular! But now that Fletcher, Bogue, Hitchcock, Cutler and others have taken up the subject and proved that amalgam is not the bugbear we have been taught to believe it was, I fear that foolish and unskillful men will now push the use of it to extremes, as they have rubber, heavy foil, and a great many other things that are very useful in their proper places.

Amalgam is no better nor no worse to-day than it has been for years (with perhaps a few exceptions), and in my opinion it should retain the same place it has always held in the hands of good operators—that is, as a cheap substitute for gold in posterior fillings, as rubber and celluloid are cheap substitutes for gold and platinum for artificial plates, only to be used when the patient is too poor or too mean to pay for the better article.

I would also suggest amalgam for badly decayed teeth where the expense would be great and the success of the operation doubtful.

The object of most writers has been, I think, to test by actual experiment the theories and assertions advanced from time to time on this subject, and to find out the exact scientific basis that amalgam has to rest its claims upon as a useful agent in our daily practice, and not to make converts to the use of amalgam, as some unreasonably think.

The following is a specimen of the groundless assertions that have been recklessly made from time to time:

Dr. Payne in the Chicago *Medical Journal* speaks of the poisoning of thousands of people all over the world from corrosive sublimate generated in the mouth from amalgam fillings.

This assertion is pretty effectually answered by the certificate of analysis of Prof. Chandler, of Columbia College, addressed to Dr. Bogue:

"Sir.—The samples of saliva in which various alloys (amalgam) had been digested, submitted to me for examination, contain no mercury in solution."

These samples of amalgam, with the teeth in which they were placed, before being submitted to Prof. Chandler, had been immersed for three months in various acids so powerful as to nearly dissolve the teeth.

There are three samples of each of the following amalgams before you: Arrington's, Townsend's, Lawrence's, "Extra," Fletcher's and Kearney's. I do not see any great difference in the working of these amalgams, with the exception of extra amalgam, which works poorly.

In conclusion I would say, that if almost any amalgam is used with care, teeth can be filled to preserve them without injury to the health; but as for putting it on a par with gold, I certainly do not, except in the few cases already mentioned.

Dr. Hanks' paper was well received, and gave rise to considerable discussion.

Dr. L. H. Delange then read a paper, Rubber *versus* Celluloid, for which he received the thanks of the Society.

Bad are the goods when two masters chase one man. Good for the man. Two men have two workmen. Good for the consumer. So it is with rubber and celluloid.

Before 1870 we used but one material, we employed but one workman; since we have had other toilers, and, ergo, other substances; for, if "necessity is the mother of invention," competition is certainly its father.

It is due to the earnest efforts of the Messrs. Hyatt, that celluloid has reached even its present state; as the compound we have now, has certainly more plasticity and less inflammability than the collodion obtained by the process first patented.

In experimenting with camphor and soluble cotton, they were mixed and casually squeezed in the hand—when it was found that they compacted and showed signs of combination. It was previously known that a solution of camphor and alcohol was a solvent of the soluble—cotton, but this proved that alcohol need not be used: and that camphor was, under proper conditions, a perfect solvent.

It was then ascertained that a chemical combination took place; and a short time after the first experiment, by heating the material to a lower temperature than was necessary to melt camphor, a lump of solid celluloid was produced: subsequent experiments have developed the fact that a smaller quantity of camphor could be used, thereby making better plates, and almost doing away with the unpleasant recollections of last winter's clothing.

One of the greatest objections against celluloid, formerly

urged by the vulcanists, was, as we have said before, the unpleasant camphor taste, and we believe this is still put forward by some of the non-experimenters. This difficulty has been well nigh, if not entirely, overcome within the last year or two.

In working this substance no disagreeable odor is noticed, as there doubtless is in rubber; in fact, this is quite a point against rubber, for in manufacturing it sulphur is used, and we all know what a delightful perfume results from the combined effects of escaping sulphurous gas and heated caoutchouc. Not only is the escaping gas offensive, but it is unhealthy; a fact which could never have been stated of celluloid, even when in its condition of greatest imperfection; the odor of camphor, though not pleasant to all, is beyond denial unhealthy to none, and even this is passing from us. The rubber retains its obnoxious scent even after completion.

That the new compound is more agreeable to the mouth, is easily judged from the remarks of the patients, and the general satisfaction that it gives.

It is much lighter than rubber, and decidedly more susceptible to a high polish when we have the set completed; and together with these pleasant properties, it also refrains from heating the mouth as the old material does.

The whole substance has now properties of lightness, toughness and strength, together with a resisting power which vulcanized goods never had, or never will possess.

Celluloid now is entirely different from that which was first manufactured. Dentists who made use of it at that time had obstacles which they thought they would never surmount. These failures induced a number of the experimenters to toss their celluloid and apparatus to the waste pile, and return to their first love—Uncle Josiah.

We quote from the "Cosmos" of March, 1872, the remarks of Dr. Earnes, as follows:

"Sufficient time has now elapsed to prove, we think, the utter worthlessness of this material as a base for artificial teeth, and we publish the following list of experimental cases with this base, with the results, as our own experience, and upon which, in part, we have our opinion of its merits."

After which follows a long and most melancholy list of failures, both in color and texture. His plates ran from pink to dark brown, and then warped and shrunk to such a degree, that sometimes the plate would not touch the centre of the arch by one-fourth of an inch. It appeared that all of his cases were returned in about three weeks, or less. Unfortunate man!

Do dentists ever think of the failures made and the trouble caused by rubber on its first introduction? I do, for at that time I acted as an agent for the Goodyear Rubber Company, and had more, much more difficulties in introducing it, than the agents for the celluloid have had in bringing their base before the public.

Dentists howled at the idea of using rubber in the mouth; they said it was unclean, that it smelled badly, and I well remember several prominent members of the profession, among whom was Dr. Elisha Townsend, of Philadelphia (now deceased), stating that he would not have anything to do with a material injurious to the mouth.

The feeling was so cogent that some dentists advertised that the new base would not be used in their establishments, but they did use it eventually, as it was the only means of self-protection, and with the exception of the metals, it held undisputed sway for a period of more than fifteen years.

But now another base has interfered with the even tenor of its ways, and in celluloid it will meet its Brutus.

Does it not argue strongly for the excellence of the new material, or the perniciousness of the old, that this composition should, in less than five years, stand the mighty rival of rubber, with its twenty years of experience, and "millions in it."

One of the great points the old dentists had against rubber was its injuriousness, not only to the mouth, but to the whole system; and the cause for this we detect in a moment, when we hear that the coloring matter used is the red oxide of mercury, to the amount of over one-sixth of the whole.

Of course, in vulcanizing, minute globules of mercury are set free, and what is the result? Salivation.

Dr. J. C. C. Dowing tells us of a patient who consulted him in May, 1874, who had been suffering for over six months from dizziness, bad memory, want of sleep, depression of spirits, dimness of vision, protophobia, increased lachrymation, nasal secretions alternating in excess or deficiency; mucous lining of the mouth, throat, tongue, gums, etc., congested and irregularly covered with various sized patches of superficial ulceration, painful deglutition, increased salivary secretions; fetor of breath, skin of the arms, neck, chest, and, to a greater or less extent, the rest of the body, covered with an eruption in various stages of progress, attended with a sense of heat, dryness and itching; pains in the bones, which were worse at night, together with the loss of the appetite.

He examined her artificial teeth, and having ascertained from

her that she had worn them for sixteen years, he saw the cause of all her sufferings in an instant. The polish was worn off the plate, and under a small lens, the surface seemed studded with minute excavations, like needle-pricks. Where was the mercury? In her system. To use the words of Brett Harte, she was "salivated with mercury."

He also gives another case, but this is enough, as you have, no doubt, all seen similar circumstances, and have known what caused them; dare we say how many cases have occurred in which the cause was not suspected? Now celluloid is covered with the same material, but in the infinitesimal proportion of one-sixteenth of one per cent. and often less, with this amount people could not be "poisoned," unless indeed they lunched off the material, on the principle of "Jerry Cruncher."

Can we compare the color of rubber with that of celluloid? the former is no more like the human gum than an article often mentioned—to be found in the hats of some of the candidates for office, a brick; the latter is such an exact representation, that even professionals can often be deceived. Of course, the red oxide of mercury can be done away with in the rubber, leaving it a beautiful black, and may be successfully introduced into China, in the course of time, for their married ladies; elsewhere I despair of its success.

On account of the resemblance of celluloid to the gum being so perfect, the plain teeth can be used, and you know full well what an advantage that is. The cost is so much less; for even if the price of the celluloid plates is higher than an equal amount of rubber, yet the immense saving on the plain teeth more than compensates for the extra expenditure.

In doing away with the gum teeth we get rid of the proclamation of falsity contained in the unsightly separation of the blocks. Then the cleanliness with which this can be manipulated must give general satisfaction, together with the little work required in finishing. It is susceptible of the highest polish, and retains such a coralite lustre, that it is now used by jewelers as an imitation of that substance. Another great advantage is the impossibility of detecting a repair, which is always seen in rubber, by the difference in color.

There has been a variety of machines invented for the practical working of the new compound. The boiler with oil was first used. The difficulty in procuring pure oil induced the substitution of steam.

We are indebted to the enterprise of Dr. Hunt, of Washington, D. C., for the introduction of glycerine, quite an improvement on oil.

No doubt that many of the failures of our dentists may be attributed, not to their ignorance in working the material, but to the poorness of the machines that are now in use. Of course the apparatus manufactured for the vulcanizing of rubber has been brought to a high state of perfection, through long years of experiments, as well as experience, but give the celluloid the same opportunities and rubber would be but a dim vision of the past.

In making celluloid it is of the utmost importance to pay particular attention to the thermal changes, as when heated above 280 degrees Fahrenheit, the mass becomes spongy, and when not heated up to this point, it has not the required plasticity; therefore the pressure should be applied gently at first, and increased as it approaches the finishing point.

The greatest development in the laboratorical working of this substance has been made by Dr. Hindsman, of New York City, whose machines take a decided lead of all I have seen, not only for the certainty of working up your cases, but for the facility with which you can examine your work during its progress.

Before I close my remarks, I must call your attention to the fact, knowing, as many of you do, that I am a non-licensee of the Rubber Company, and you may suppose from that I am like the "fox and the grapes." Let me assure you such is not the case, and were I proffered a license free to give up the use of celluloid, I would refuse.

To recapitulate, the advantages of celluloid are as follows:

First. It has a toughness which rubber does not possess.

Secondly. It is cleaner.

Thirdly. It is stronger.

Fourthly. It is a better color.

Fifthly. Plain teeth can be used.

Sixthly. It is more pleasant to the mouth.

Seventhly. It is lighter.

Eighthly. It is devoid of unpleasant odor in working.

Ninthly. It is not poisonous.

And last, though not least, we save our "Bacon."

Dr. Stockton made a drawing of a dry heat apparatus, which he considered the best method he had used so far.

Mr. Starr, representing Mr. S. S. White, gave his experience in the use of celluloid, which was very interesting to the members present.

The subject was then closed, and the newly elected officers installed.

Dr. C. S. Stockton, President; J. W. Scarborough, Vice-President; Chas. A. Meeker, Secretary; J. W. Dibble, Treasurer.

The retiring officers were awarded a vote of thanks, and thanks extended to the representatives of the press and the Messrs. Leland.

CHAS. A. MEEKER,
Secretary.

Minutes of 1876.

CONGRESS HALL, Atlantic City, July 18th, 1876.

The Sixth Annual Session was called to order at 12 M., by President Stockton. The roll was called. The President then read his address, (President's address, see Report). On closing, he introduced to the Society Dr. Wm. H. Atkinson, of N. Y. Dr. Atkinson thanked the President and members for his kind reception. He loved to be with us and be one of us, and hoped to be criticised as he would criticise the President and others when they differed from him; never mind your age or ability when you know of a *fact*, tell it to others, and stick to it. He spoke of the age of our profession and its great advance. Excellence must consist in knowing things as facts, and not come to premature conclusions. Dr. Barker Dean, of the Pennsylvania Dental College, was introduced, also Drs. Darby of Philadelphia, Townsend, Bonwill and Webb, of Philadelphia, and Dr. B. M. Gildea of California.

The President appointed Drs. Chew and Pierce on the Examining Board, *pro tem.* during the absence of Drs. Dippolt and Hanks. Chas. Pullin and Henry Rech, of Newark, were elected members. The minutes of the last meeting were read and adopted. Dr. DeLange, chairman of the committee on the exemption of dentists from jury duty, reported the legislature as unfavorable to it. The President spoke of his pleasant reception at the meeting of the New York State Society, and regretted being the only delegate present.

The report of the Treasurer was read and adopted.

Dr. Hayhurst read his paper on "The History of Dentistry." The subject, he thought, was too large to be read in one installment, and he would read a portion now and would continue the subject next year, if the Society desired. (See paper in full.) Dr Gildea commended the research the speaker's paper contained, and spoke of the early fillings; the first being tin, and the excellent work performed with that. Until after the establishment of Dental Colleges, nearly all the knowledge of the profession was trade secrets, jealously guarded.

Dr. Atkinson spoke of the cost of learning when he commenced, it being from nothing to $500, the instruction consisting of the manufacture of a few instruments, extracting and clipping off the roots for the insertion of Pivot teeth. He thought the first systematic education came from the dental colleges. Do not growl at the product of the colleges, for if the material was good the product would have been better. He advocated the direct education of the students, taking a step at a time; he liked the plan of the Ohio college—the examination of students according to ability, classing them as seniors and juniors, which was a step in advance: learn one thing at a time, not go from one thing to the other. The difference in progress has been that the majority of the old-time dentists could not now pass the examination our younger members can. Do not go with the conservatives nor the more advanced; there should be more real work in the college than preaching. Which does the most good, the local societies or the colleges? Where the societies exist, the colleges flourish. The American Dental Association was spoken of, and was now thought to be more of a mass-meeting than anything else.

Dr. Gildea, in regard to ignorance in the past, reverted to Dr. Koecker, whose only remedy thirty-six years ago for tooth-ache was Bay Rum.

Dr. Welch had respect for the pioneers, as being earnest, ambitious men. He described his feelings on his first visit to the Philadelphia Colleges: the students being listeners, not practical workers; and in studying, the profession was advised to graduate from a medical college.

Dr. Barker: The colleges simply represent the profession as it is; there were too many colleges, there should be but one. He thought that a man who had taught one branch for years must certainly know something, and be able to teach what he knows and impart food for thought to others. There has been a backward step in mechanical dentistry which used to possess all the beauty of finished jewelry. He begged the fraternity not to give up mechanical dentistry.

Dr. Darby spoke of the good, honest work of the professors in Dental Colleges, and he felt it keenly to hear the colleges disparaged. As a student he learned more in four months in the college than he dreamed of; and was well satisfied with the time spent.

Dr. Barker was asked to speak on Dr. Reading's paper, "Mechanical Dentistry, now and twenty years ago," (the essayist being absent). As the ground had been covered on the preceding subject the Dr. declined.

Dr. Gildea, when he commenced practice, had used five franc pieces hammered on an anvil; used sheet zinc for models; in 1845 air chambers were first used. In later years rubber came into notice, and the profession adopted it with hesitation, and on account of its cheapness soon passed into the hands of the empirics

Dr. Hayhurst, when he started thirty years ago, made all his own tools, also his own tooth body, taking the spar from an adjacent field; did his own carving, reduced his metals, and did everything from the very beginning. All the Mexican and French pieces were then hoarded. I can see no such work now for beauty and design as there was twenty-five years ago.

Dr. Atkinson thought that dentists now had not the chance of learning gold work that twenty-five years ago gave,—on that basis mechanical dentistry had not retrograded.

Dr. Chew dated his experience back nineteen years, then worked from the beginning; would rather use metal plates for full plates, and rubber or celluloid for partial,—drawing his deductions from the wearing of cedar journals in harder metal axles.

Dr. Brown could go back nineteen years, and in regard to gold work wished he was back there now; rubber having come into such general use and being cheaper was more used by the masses to the detriment of metal work. Spoke of the advertisements in Philadelphia papers of from $2 to $4 per set, and in these times these people quickly pay $10 or less for poor work, to the detriment of dentists doing good work at double the price.

The President thought the remedy was more interest in the Societies; bring such men into our State Societies and make better men of them.

Dr. Barker said it was compulsory in his college for the students to make metal work one-half the session. The fraternity should be able to give their patients the reason why, for every manipulation in the mouth.

SECOND DAY.

The session called to order by the President at 9 A. M.

The following gentlemen were elected officers for the ensuing year:

Dr. Welch, President; Dr. E. M. Breesley, Vice-President; Dr. Chas. A. Meeker, Secretary; Dr. Dibble was re-elected Treasurer; Drs. J. Hayhurst, Geo. C. Brown, Chas. Dippolt,

C. W. Meloney, E. F. Hanks, Examiners; Drs. A. W. Kingsley, J. C. Hanks, J. R. Goble, C. S. Stockton, A. A. Pierce, Executive Committee.

The following were elected delegates to the New York State Dental Society: Drs. J. Hayhurst, W. Pinney, C. S. Stockton, J. R. Goble. The following were elected delegates to the Pennsylvania State Dental Society: Drs. Dobbins, T. B. Welch, G. C. Brown, C. W. Meloney. The following were elected delegates to the American Dental Association: Drs. J. R. Goble, W. Pinney, E. Chew.

Dr. James Clark then read Dr. E. F. Hank's paper, "Some Thoughts on Operative Dentistry." (See paper in full.) Dr. Goble coincided with all of Dr. Hanks' paper. Dr. Welch also, and especially urged cleanliness during operations; he washed his hands in a conspicuous manner that his patient should know he was cleanly.

Dr. Atkinson of himself thought both his notoriety and ability were over-rated; some of the younger members of the profession may have dormant thoughts he might suppress by speaking. In regard to filling, he never made one but that when he was through he might improve it if he could do it over again. The principles of Operative Dentistry are pathological and physical actions not understood by the best men of our profession. When we understand the positive and negative qualities of the teeth, we will be more successful. The filling must be so the currents from the teeth proceed towards the filling; the enamel and dentine is nearly a mineral, being so low an organ. The prime requisite is to exclude moisture, and nearly every filling is good if otherwise well performed. Keep the mouth in a cleanly condition always.

Dr. Barker thought there was too much sentimentality in the talk of how the dentists treated their patients. We should take deeper thoughts to give us more food for reflection. A man who rushes to the front with a case he detests, it amounts to nothing, you can't prove anything by it—make investigations for yourself.

Dr. Darby thought it was not how we filled a tooth, but whether we save it; and they can be saved by tin, gold, amalgam and other materials. He sometimes thought the people would be better off without dentists. He exhibited Dr. Bings', of Paris, method of inserting incisor teeth. Gold wire soldered on the artificial tooth, the end to be inserted in the cavities and plugged; also his method of filling molars—filling with gutta percha and placing a gold cap on top.

Dr. Webb, in referring to the cause of failures in filling teeth, thought the galvanic action had little to do with it, but was from want of care in the operator not being thorough in his work. In regard to Dr. Bings' method, thought cement plombe better, being nearer the shade of the enamel. Liked Dr. Hickman's method better, he using porcelain as a cap and antagonizing with the engine.

Dr. Barker deprecated the manner of some dentists in bringing forth new methods which were not original. He condemned Dr. Bings' method on account of the secretions getting between the enamel and gold cap. Constitutional principles was more the cause of failures than anything else, which the Dr. elucidated at some length.

Dr. Pinney's new matrix was shown, and was well thought of.

It was moved and carried to adjourn, and witness a clinic by Dr. Bonwill with his electric mallet, who performed two excellent fillings in the central incissors of Dr. Smith; one in 16 and the other 30 minutes. His beautiful little instrument received great praise by the members witnessing its operations, and the Dr. received the thanks of the Association.

WEDNESDAY, JULY 19TH.

Session called to order by President at 3 P. M.

Dr. A. W. Kingsley's paper on the extraction of the Six Year Molars. The Dr. begged to change the title to the Treatment of the same. (See paper in full.)

Dr. Barker thought the paper eminently conservative, but thought that no man could say that persons with 32 teeth in their mouth was in a normal condition. With exceptions he was an evolutionist; a high civilization had tended to metamorphosis. In the main the better result could be obtained by their extraction and the personal appearance improved. The Dr. cited cases of loss of organs becoming hereditary in the coming generation.

Dr. Goble could not agree with Dr. Barker in the theory that the mutilation of any member would be hereditary in the offspring; and that perfection of the dentals in children was more from what the mother ate during pregnancy, and that dependence should be placed on the food supplied during childhood.

Dr. Atkinson thanked Dr. Kingsley for his able paper, and thought it showed deep study; he agreed with him in the main, the habits of life had a great deal to do with the saving

of teeth; the law of hereditary descent was the mixing of semen and cases of cleft palate explained his theory.

Dr. Barker did not contend that a mother who had lost her teeth, that the loss would appear in the offspring. Where we see a long line of ancestors and in the loss of a member he contended the loss would appear.

Dr. F. A. Levey, of Orange, was proposed for membership and elected. Long Branch was agreed upon as the next place of meeting. Dr. Goble presented a resolution to change Sec. 1st, Art. VII of By-Laws, to read "third Wednesday in July". A paper by Dr. T. B. Welch, on Dental Therapeutics, was then read. (See paper in full.) Dr. Barker saw nothing to to oppose in Dr. Welch's paper.

Dr. Darbey being called for, re-opened the question of Six Year Molars. He spoke at length of his opportunity at Cairo, Eygpt, of the examination of some 600 mummies, and in all the cases he found large and well developed maxillaries and the full set of 32 teeth without decay, and only slight abrasion on the grinding surface; also in the Potter's Field at Gahena, he had the privilege of examining the skulls of monks dating three centuries back; there was no contraction of the maxillary, the teeth correct in number, and no decay. In those of the 17th century he found slight contraction and decay; at the present day he thought where there was a loss of the six year molars, the last molars were larger and better.

Dr. Goble, on return to Dr. Welch's paper, wished it had not been so negative, as it left nothing to discuss.

Dr. Atkinson spoke of the use of creosote; he first used it empirically. He explained its therapeutic action; thought all remedies acted in an occult manner. The action of aromatic sulphuric acid in the treatment of alveolar abscess was talked of, and he contended it never destroyed living bone.

Moved and carried to adjourn.

THURSDAY, JULY 20TH.

Session called to order at 9 A. M. by President.

Dr. W. Atkinson, Dr. Bonwill, and Dr. E. T. Darbey were elected honorary members.

Dr. Hayhurst, Chairman of Examining Board, reported the examining and favorably passing of T. M. Brown, Newark; James M. Palmer, New Brunswick.

Dr. Goble's resolution to change time of meeting to third Wednesday in July, passed.

Dr. Dibble's resolution of Art. IV, By-Laws, to charge $5.00 initiation fee and certificate included; passed.

Dr. Clark's resolution, order of business No. 9 to No. 7, and No. 7 to No. 9, passed.

Dr. J. C. Hanks read Dr. Meeker's supplement to State Law, referred to committee, Drs. Kingsley, Clark and Brown, to report. Moved and carried that the Secretary print 100 copies and distribute.

A minute of the session at Long Branch (1875) was called to be read, by Drs. Goble and Stockton.

In reference to Dr. Goble's remarks on Dental Colleges, Dr. G. said the Dental Colleges had his sympathy and had done great good, but he would make no corrections in the minutes of what he said. A German dentist in Hoboken, who went to Germany and could not practice, came to New York, called the Board of Censors, and upon examination could not pass, he had made an offer of money, he went to Philadelphia, and came back in two weeks with a diploma.

Dr. Hayhurst thought if the man's name was not known, nor the college, it was probably a forgery.

Drs. Chew and Pierce generously refunded their fee of $10.00 each as members of the Examining Board, to serve as a fund to better carry out the provisions of the act to Regulate the Practice of Dentistry. They were awarded a vote of thanks by the Society.

Dr. Brown called the attention of the members to the use of the Backus Water Motor in their offices; his was the first put in by the Company for dental purposes and was a perfect success. He used the power for the engine, a fan and saliva injector; it run with 12 lbs. pressure,, and is not liable to get out of order.

Dr. L. H. DeLange's paper on Dental Rat Traps, was then read. (See paper in full.) No discussion ensuing, Dr. Chas. A. Meeker's paper on Dynamic Force, or the Magnetism of the Sexes during Dental Operations, was read. (See paper in full.) Drs. Hayhurst and Atkinson spoke some time on the subject, and were pleased with the ideas brought forth.

Dr. Bonwill differed radically with the essayist, and thought the qualities of magnetism had little to do with fatigue during dental operations. He brought forward the theory of rapid inhalation and exhalation of air to produce a partial anesthetic effect on the sensory nerves, so that sensative excavations could be done without pain.

Dr. T. B. Welch was installed President, and returned thanks for the honor conferred. Dr. Stockton, the retiring President, was awarded a vote of thanks, and the meeting adjourned, *sine die.*

CHAS. A. MEEKER, *Secretary.*

Dental Compensation.

PRESIDENT'S ADDRESS.—DR. C. S. STOCKTON.

GENTLEMEN:—We meet again in our annual session, not, it is true, "on the shore at Long Branch on a summer's day," but on old ocean's shore, where I trust her gentle roar may lull to quiet the tired brain, shattered nerves and weary body of all. We meet with our number unbroken by death's call, for which we all should be thankful. We have had some additions to our fraternity during the year, by satisfactory examinations before the Board of Examiners. One whom we have long borne with, and who also said the examiners might go to Hackensack or any other place whose name begins with the same letter; and as the examiners are all "Gentlemen" and "Scholars," your President did not propose to have them so disposed of, but bid the next best thing and had the obstreperous "tooth-puller pulled," and he soon came to terms and cried, enough! enough!; and I am glad to learn from the Chairman of the Board, passed a satisfactory examination. Our law works well. I wish to say that there is no desire or thought to make Dentistry à monopoly in our State, but we are quite determined to see to it that those who propose to make it the calling of their lives, shall be well qualified. The Executive and Examining Committees met at the same time and place, and were very handsomely entertained by Dr. Dippolt, for which your President thus publicly thanks him. One of the gentlemen who received a certificate from the Board, was objected to by myself on the ground of his practical ability; and had there been a veto provision for my action, I should certainly have returned the bill without my approval. There should be a practical as well as a theoretical knowledge manifested to the clear understanding of all the members of the Board.

I have now called your attention to the only matters that have come before me for official action; and thus having gone over the detail matter of our working, allow me to say, I hope you all have had a very prosperous and generous year. And

this reminds me of a subject upon which I wish to speak to you, my fellow-workers,—the subject of prosperity, or in other words, "Dental Compensation." It is a theme I know upon which Dr. Stevens is to give us a paper, yet I trust not to trespass upon his ground. It is a subject written upon almost by the Noah Dentist, and we have been flooded pretty nearly with the subject from that day to this. It is therefore nearly impossible to give you anything new upon it, yet there are some things that seem to me that need to be said over and over again. I think I can say, and say truthfully and without fear of contradiction from any of you, that fees received, play no unpleasant part in the great drama of our lives; and if this is so, how can we increase the present sum of our happiness. But you say you would not advance now in the face of these troubled times. Advance, yes advance! until the fees are adequate to the services rendered. It is true, it is but a little while—a very few years—that we have taken rank as a profession at all, and we have gained it with the hardest toil and sacrifice; but in no measure have we reaped the harvest of compensation that our toils demand. Of course there are exceptions to this broad complaint, but they are few. Some in large cities, but the assertion is true as regards the mass of the profession. Contrast the fee bill with the long day's labor, and you find when the weary hours are done, that you have not been adequately compensated. Turn over page after page at the close of a long, weary and toilsome year, make an inventory of your gains and an estimate of the comforts they will bring, and see, when your professional career is ended, if there will be peace, comfort and rest to the weary arm and tired brain. No, it is not there. A dentist's life is a hard one. If he is anything of a success at all, it cannot be otherwise. The average life of the dentist is short,—shorter than any other profession. While we have our strength we must work, and in full consideration of our duty to ourselves and our families, require a compensation adequate to our services. I say that no profession is so meagerly paid as our's, and the fault is our's and not the fault of the people. In all progress, the higher the development, the greater the reward; is it so with us? We have been marching on for half a century, steadily and grandly, and at times seeming to be almost at the top round in the professional ladder, only and except in remuneration for our labor are we satisfied to stay where we are. I do not believe there is a conscientious dentist present who does not feel and know that he has done

more for mankind than mankind has done for him. Is it not time we had remedied this thing, if it be so, and establish ourselves upon an equality, remembering that the servant is worthy of his hire. Our fees and our present professional excellence are incompatible. We are all poor or comparatively so; and this is a suggestive fact: how many own their houses unincumbered? How many live in a manner becoming the dignity of their profession? How many are able to sustain themselves on a plain of social equality with the members of the other professions? How many are able to enjoy the advantages of the improved appliances? How few can afford to attend the society meeting without closely counting the cost? These are the questions that you may answer. "Dental fees" advance, and if it could be done with unity—if?—what grand results. It would be the last step almost to put our feet upon the excelsior round of the ladder. Ask, if you would receive.

History of Dentistry.

BY DR. J. HAYHURST.

It is the province of the historian, not so much to set forth what may to him *appear* to be of interest and importance to his readers, as it is to gather up the golden sands as they may have been strewed along the pathway of time by those who have preceded him. It is for the preservation of these precious grains and the systematic arrangement of them that the true historian ought to labor. He must delve amongst the musty records of the past, and bring to the light of our day the acts of those worthies who wrought at that time. He cannot make the facts nor alter them; but he must gather them from the records of other men, or as they may come to his knowledge by the tradition of the "oldest inhabitant," as he may best find them.

It may be proper here to say that for a large portion of the facts gathered in this veritable history, I have freely used the pages of a work known as "The American Journal of Dental Science." I do this that I may not be charged with plagiarism, if I should fail to give credit in every place of some incident used at the time of my using the same, I make this general credit to avoid making so many special ones.

We are fully aware of the attempts that have been made to trace the origin of our profession to the highest and most remote antiquity, by asserting that vestiges of the art have been found amongst the Hebrews, the Egyptians, the Greeks, and Romans. That there are such evidences seems to be beyond a doubt. I believe they are well authenticated. But there is no evidence in this that there existed any even rude attempt to practice the art as a profession.

About the latter end of the fifteenth century, our profession was in the hands and under the tender mercy of illiterate barbers and mountebanks; but with the general advancement of art and science it advanced, until about the latter part of the sixteenth or the beginning of the seventeenth century, when it began to assume a more prominent position especially

amongst medical men, among whom was a surgeon by the name of Landemey, of the City of Paris, who was sent for, to the Court of Spain, in 1716, to perform a small operation on the mouth of Philip V, then sovereign of that kingdom. This incident, trivial as it might seem to be, so far as my knowledge goes, is the small beginning of the science of dental surgery. This is the tiny lake or spring in which the mighty river rises, upon whose banks we here to day stand, and whose waters we partake of, and whose broad current we regard with such just pride.

We find him in 1723 acting in the capacity of dental surgeon to his Catholic Majesty Philip V, King of Spain.

At this period we also find that Fachard, a dentist in Paris, was engaged in writing a work on dentistry which was published in 1728, in two volumes. This was the first attempt to separate, systematize, and methodize the profession or practice of dentistry over the whole world and separate it from general surgery and medicine. Hence he has ever been considered and justly styled the Father of Dentistry. So far as I can judge, our profession was born in Paris, and spread over the whole of Europe. In fact up to the year 1716, no less than 138 different works were published on this branch of medical science; and when we look at the state of our profession at this latter date, we must involuntarily be struck with the immensity of the field just opened to the view of the enterprising and zealous enquirer after knowledge in this direction. And no doubt there were many efforts made to add to the fund of dental literature, which did not rise into sufficient prominence to come under the view of the historian of that day, and of course has been lost to us. We might, if time permitted, extend our remarks upon prominent names, who about this time appeared in France, and who gave character and standing to our profession.

The next incident which appears prominent was in Great Britain, in 1770. Thomas Budman wrote and published a Treatise on the Teeth. He became eminent to such a degree that he was appointed Dentist in Ordinary to his Majesty King George III. He seems to have been satisfied with his honors and emoluments, as it does not appear that he ever pursued his labors and researches any further.

The next prominent name was John Hunter, who wrote a work on the Natural History of the Teeth in the year 1771. In 1798, a Mr. Blake wrote a treatise on the same subject. In 1806, eight years after, Mr. Fox contributed to the fund of

dental literature. Previous to this date, John Hunter wrote another treatise, which probably most of you have been conversant with. It contains much useful information, and conveys to the reader an idea of much thought and deep research. But the peculiar views of the writer prevented the work from being universally adopted in advancing the interest of the profession. But I would not detract one iota from the just fame of the writer.

In the natural order of things we are called to look over our own land for further matters of interest in the prosecution of our design, in our endeavors to record matters of interest in this attempt at history.

During the Revolutionary War there was a French dentist by the name of L. Marie, who offered his professional services to the citizens of New York. There is no distinct statement as to how he came to this country, or as to his motive in doing so. But he most probably arrived with the French troops who came to assist us in our struggle for independence. He remained after the war was over. It is not at all probable that he carried a diploma in his pocket, or was a graduate of a Dental College. He practiced the operation of transplanting teeth, and according to the account we have, was eminently successful. To him belongs the credit of establishing the first dental college in this country, if we may dignify with that term his attempt at giving instruction in a professional way to students to practice "the art of Dentistry," in accordance with his advertisement issued at that time.

About the same time a person by the name of Whitelock, came from England with a company of theatrical performers. He settled down to the practice of our profession. His knowledge was probably of English origin. He was successful in his operations and acquired a good standing amongst the staid inhabitants of the Quaker City. There seems not to have been anything strange or slashing in his mode of operating. At least there is no record of anything of the kind.

Thus was planted the seeds which have germinated and grown into such noble proportions in the production of our well established Dental Colleges, and our scores of able instructors in these institutions; together with such a host of eloquent members of the profession, who are able to hold spell-bound by the hour such audiences as our Annual Conventions call together on these occasions.

But we now come to another era in the development of our professional existence, and a new class of native characters

present themselves for our contemplation and edification. Amongst these we shall mention the name of John Greenwood, a sketch of whose life may be found in the American Journal of Dental Science. He was born in Boston, Mass., May 17th, 1760, and whose father, Isaac Greenwood, was the first practical dentist in that city. The professional life of the person under consideration commenced in the city of New York, about the year 1790. He seems to have stood alone in his profession, and was dentist to George Washington, for whom he performed an operation, and manufactured an entire dental apparatus, which for ingenuity and mechanical skill would have done credit to the most experienced of the profession in any country. "And the more so," says the historian, "as we have reason to believe that it was the first attempt of the kind that had ever been made in this country." And moreover that he had never seen an example of the kind either by drawing, or otherwise, to serve him as a model or guide. This fact gave an impulse to the onward march which we feel at the present moment.

At this time Dr. Gardette and Dr. Spence were in successful practice in the City of Philadelphia.

The following extract from Watson's Annals, probably referring to an earlier date, may be found of interest as throwing some light on the condition of our profession at this time. It reads thus: "It may surprise some of the (then) present generation to learn that some of those aged persons whom they now (at that time) meet, have teeth which were originally in the heads of others. I have seen," continues the relator, "a printed advertisement of the year 1784, wherein Dr. LeMuire, Dentist, proposes to the citizens of Philadelphia, to transplant teeth, stating therein that he has successfully transplanted 123 teeth in the preceding six months. At the same time he offers two guineas for every tooth which may be offered to him by persons disposed to sell them,—front teeth or any of them." This was quite a novelty in Philadelphia. The preservative care of teeth was then illy understood. The Doctor had, however, great success in Philadelphia, and made quite a fortune there. Some of the most fashionable ladies of that then fashionable metropolis had such teeth inserted. They were in some cases as much as two months before the patient could eat on them. One lady told me that she knew sixteen cases of such persons amongst her acquaintances. The same author says, Doctor Baker was the first person ever known as a dentist in the city of Philadelphia. Tooth brushes were

not even known; and the most genteel and fashionable were content to rub their teeth with a chalked rag or with snuff. It was deemed effeminate in men to clean their teeth at all.

The history of dentistry, at the beginning of the present century down to the time of the personal recollection of some of our older members, is a history of individuals. These had grown to be so numerous as to baffle the pen of a more ready writer than your humble servant. Suffice it to say, that although there were some worthy members, who practiced as they best knew how, yet they were mostly rough and unskilled, and eked out a scanty livelihood in a very questionable manner. I admit that the circumstances were very unfavorable. All instruments used by them were made either by themselves or by some blacksmith, who understood nothing of the requirements of so exacting a profession. And each practitioner was so jealous of his brethren that no intercourse, either socially or professionally, was permitted or desired. An intimate friend of mine, who was one of the pioneers in our profession, related a circumstance to me which illustrates the condition of matters at that time. He was in the city of Philadelphia, and had occasion to visit the office of one of the most celebrated dentists of that day. The Doctor received him, conducted him to his chair,—just as he would one of his patients. But by some means he discovered that his visitor was a practicing dentist. No sooner had he made this discovery than he closed the box which contained his instruments with a slam, crossed his legs over the top of it, and exclaimed, "*no you don't*," and sat in that position until his visitor's departure, fearing to move, because by so doing the secret of his success might escape from the box which he seemed to guard so carefully. Thus we see an atmosphere of supreme selfishness prevailed,—each one shut himself up for fear some of his secrets might be made available to some one else, and the community at large might be benefitted. But this state of affairs could not long be maintained under our free institutions—"And he commanded that there should be light, and there was light."—and the darkness was dispersed; and instead of our profession being a very selfish one, it has developed into one of the most social in the world. In proof of this, I need only refer you to the many Conventions to which we, one and all, gladly flock; and in these assemblies there exists, to a great extent, a very strong flavor of the social ingredient. It is right that it should be so; we should be brothers and act towards one another as such. It is to this

social feature that we owe much. It has assisted us in the establishment of our institutions for instruction. It is now exciting a spirit of emulation amongst the younger members of our profession. It has led us to cry out against professional patents and professional secrets of all kinds and classes. If we know anything that will benefit the community, brethren, let us have it. Let us so act that when we leave this stage of action, the world will be the better for our having lived in it.

We have thus far in brief and imperfect manner, endeavored to give some general ideas of the origin of our profession—of its gradual development, of its increasing importance as an art, and of its wide-spreading usefulness, in foreign countries, but more especially in our own. That for a great length of time it was considered in no other light than as a pursuit, purely mechanical, and the success in business depended much upon the skill and address of the operator from a purely mechanical standpoint.

In its onward march it became manifest that its advocates and supporters must become more highly educated in all that goes to make a thorough and skillful operator. It became apparent that there must be added to the already mechanical acquirements of the profession, a knowledge of anatomy, physiology and chemistry, and such other collateral sciences as were from time to time shown to be essential.

The means for the acquisition of a complete dental education was not long wanting. Indeed, hardly had the demand been made known, before Dental Colleges sprang into existence. Enterprising and ambitious professors were called to fill the various departments, and the profession took a proud and independent stand that now challenges the respect, if not the admiration of the more ancient professions in the world.

Here I might, with propriety, go into the history of the Dental Colleges, especially in our own country. But the length of this paper admonishes me to resist the temptation to further enlarge in this direction, and leave until another occasion (if the Society should see fit to command me) the history of this powerful influence upon the usefulness and destiny of our profession.

Dental Colleges were established in Ohio, Pennsylvania, Syracuse, Boston, New Orleans and Michigan in the order named, and probably elsewhere. Some Medical Colleges added a department in their course of study. Simultaneously with these were established State Dental Conventions and a

National Association, all of which are pushing us on to our "manifest destiny," and among these I am proud to point to the New Jersey State Dental Association. And pardon me if I say that she stands neither last nor least amongst her sister associations of the present day, as her attendance and the character of her members heretofore will abundantly testify.

And now, with all this machinery at our command, for the education of those who may choose to enter the profession, it would be a burning shame if the standard of the average practitioner was not raised higher and higher until the people shall appreciate the skillful operator, and drive from our midst the ignorant pretender or the still more to be feared willful quack.

Thoughts on Operative Dentistry.

BY E. F. HANKS.

I have been called upon to say somethinga bout Operative Dentistry. I do not intend to give a minute discription of how to fill a tooth, as it is to be hoped there is no one a member of this Association who does not know that already. I propose, instead, giving some random thoughts that have occurred to me on this subject.

First, and most important, looking at it either from a standpoint of humanity on the one hand or successful practice on the other, I would call your attention to the treatment of patients under your hands. It is true with us as with physicians and others whose occupations lead them to inflict physical pain constantly, we unconsciously become callous, and have hard work to realize that we are causing so much suffering. Unless we make a special effort to the contrary, we finally become so hardened as to leave the impression on the minds of our patients of brutal cruelty. Now, as to the treatment patients should receive, I would suggest that from the beginning of the operation we strive in every possible way to gain their confidence, and to overcome the timidity so natural to the occasion. At first, handle the teeth gently,—feel your way carefully until you have found out just how the land lies; then you can work more rapidly, if need be, and know just how much and how little you will hurt them. Gentleness and a delicate touch, like everything else, long continued becomes a habit; and I would urge more particularly on the young men here present, to strive every way in their power to fall into this useful and altogether humane habit. I suppose there will be no use urging this on the older members who have not cultivated it before their habits are formed; and they will go on jamming instruments into exposed nerves, raking away at sensitive dentine as if they were hoeing pototoes, and making poor humanity creep and quake, their consciences serene and undisturbed, and their dear old callous heads never entertaining the thought but that they are doing their work as gently

as it can be done. When I say be gentle, I do not mean that you should be weak; I would rather see you fall into the ranks of those whom I have been abusing, than to be soft-hearted as to slight your work through mistaken kindness. That a certain amount of pain, and at times severe pain too, is necessary to the accomplishment of perfect operations, no one will deny; and I do not wish to be understood as implying that all this pain may be avoided by care, gentleness and delicate manipulation. But I do mean to say that what we cannot avoid, we can palliate; and the man who can rob the dental chair of even a tithe of its terrors, deserves the gratitude of humanity. The combination of gentleness with firmness is the happy medium we should all strive to obtain.

Another saving of pain is to always have sharp instruments, so that every stroke shall count, thereby lessening the duration of the operation and the pain at the same time, as it is well-known that sharp instruments hurt less than dull ones. Still another is to settle definitely what shape you wish your cavity, and then go straight at it. Do not go poking about aimlessly all over the tooth, picking here a little and scratching there a little, till, after half an hour's agony to the patient, nothing is accomplished. One great assistance I find is to tell patients the truth, as near as possible, and if I see the operation is going to be a painful one, I tell them so. I ask them to gather themselves together to bear it as best they can. When I know I shall hurt them no more, I tell them that also. Having been told a disagreeable truth, they believe the agreeable, and settle down comfortably for the remainder of the operation.

In conclusion, I will repeat that patience, kindness and gentleness are not incompatible with sufficient firmness to perform perfect operations.

Extraction of Six-Year Molars.

BY DR. A. W. KINGSLEY.

Mr. President and Gentlemen.—In considering the subject given me to write upon, I find I cannot satisfy myself, and fear I could not meet the expectations of the Society for whom I write, without so far changing the subject as to make it the Treatment of the Six Year Molars instead of the Extraction of the Six Year Molars. If I could prove that these teeth ought always to be sacrificed, I should simplify the matter much, and we should then only have to determine the proper time for their removal. Or, if I could establish the position that these do not differ materially from the other teeth in any respect, I should then draw an inference that like them, they should stand on their own merits and should be extracted only when their loss would be the lesser of two evils. I think we should all concede that these positions are extreme and erroneous, and that we shall satisfy ourselves better to take and pursue a medium and conservative course in our treatment of the teeth committed to our care.

In regard to the first proposition, I am aware that there are some members of the profession who seem to almost believe that an all-wise and beneficent Creator has made a mistake and given us four more teeth than we really need. Or, if man was as originally created, upright and good, as God pronounced all his work of creation to be, still among the many inventions he has sought out is the horrible one of so debasing himself as to invent and pursue such courses of living as to produce a degeneracy that can be atoned for only by the sacrifice of one-eighth part of his teeth. That the teeth under consideration are sometimes, perhaps we may say frequently, more liable to decay and loss than the other molars, I suppose no one will dispute. This liability comes, doubtless, in part, from defective nutrition in early childhood. Hence we find them subject to these deviations from the normal forms of the teeth, which are consequent upon interrupted development of the dental tissues, resulting in atrophy and honey-combed enamel, etc.

Where the incisors and cuspidati are so affected, we find the six year molars almost invariably in the same condition, while the remaining molars and bicuspids will present a perfectly normal condition, having been formed after the diseased condition which affected the before mentioned teeth had passed away.

These teeth make their appearance at that period of child-life when, from the ignorance of parents, they are often supposed to belong to the first set, and consequently not requiring much attention in the way of preventive treatment. They are often companions, for a time, of teeth of the first dentition, which are so decayed as to make their contact injurious. At this time we also find the gums in an unhealthy condition in consequence of the existence of abcess and irritation and even inflammation caused by the loosened and shedding teeth. When we consider that these teeth must exist in the mouth for six years before the other molars make their appearance, we cannot wonder that they often fall victims to the deadly influences by which they are surrounded.

In considering the second proposition, I think it must be conceded that these teeth do differ essentially, in some cases, from the other molars. This difference, in part, I have already pointed out, consisting mainly in difference in structure, which we must concede is accidental and exceptional. The other difference, that of unhealthy surroundings, is, as we find teeth at the present day, so general that we are forced to acknowledge it as the rule rather than the exception. In deciding the question of extracting or retaining these teeth, we must take into our account the all important one of saving for our patients the greatest number of useful teeth possible. This question is complicated and exceedingly difficult to determine. If we were gifted with prescience so that we could determine what would be the tendency to decay and loss in other teeth, then should we be guided by the noon-day sun of certainty in our path. Has it not been the mortifying experience of us who have been long in the profession, that when we exercised our best judgment and put forth our strongest arm to accomplish the greatest good to our patients, to find after all, our good designs defeated by some new and unlooked for development of decay or disease in perhaps the very tooth which we considered safest and best. There is one fact which I must confess has great weight in my own judgment in this connection, and that is that I occasionally find the molars under consideration the best and soundest in the mouth, and sometimes,

though less frequently, the only ones remaining in the mouth.

Perhaps the most important point to be considered in regard to these teeth, is their relation to the other teeth in cases of crowded condition and decay on their approximate surfaces. We all acknowledge the difficulty of treatment and uncertainty of results in teeth in this condition; and, sometimes where we have succeeded in saving the first molars, in after years, when the other teeth have made their appearance in a crowded condition, and we have found the approximate surfaces badly decayed, and treatment difficult and uncertain, we have wished we had removed the teeth we labored so faithfully to save, and sometimes we are forced to sacrifice them at a late day, when their earlier removal would have been attended with greater good to the patient. In case these teeth escape that rapid decay which sometimes attacks and ruins them almost as soon as they make their appearance, but still decay early, before the other molars make their appearance, and decay in such a manner as to convince us that their removal will be necessary, an important question arises as to the proper and best time for their removal. These teeth are necessary to the comfort of the patient in masticating his food, and should be retained in the mouth if possible until the twelve year molars make their appearance. The too early extraction of them would cause a contraction of the jaw, which even at the best is most likely to be too much contracted. I am aware that some one who has written on this subject lately is definite, and fixes the time as soon as the person has passed the eleventh year. I cannot see any good reason for this advice. I know that we generally find the second molars appearing at the age of twelve years, but there are often exceptions to this. I saw, only yesterday, one of my patients, a good-sized girl, whose first molars I have determined to extract because they are so decayed that they cannot be saved permanently, and the teeth are in a crowded condition. She has passed her fourteenth year, and it will evidently be some months before the second molars will appear. Would it have been wise to extract these teeth three years ago? We sometimes see cases where these teeth are extracted very early to give relief from suffering, the second molars come so close to the bicuspids as to keep them crowded as closely together as they are where all the teeth are retained. I think this never happens where the teeth are retained until the second molars appear.

When we extract these teeth to make room for the remaining ones, we desire to divide the room gained about equally

between the other molars and the bicuspids, gaining perhaps a little more room for the incisors and canines. I think we are more certain to accomplish this by delaying the operation until the twelve-year molars have come.

Having noticed some of the relations and peculiarities of these teeth, which should influence us in determining what to do with them, I am ready now to speak of their treatment. I do not know how I can present this matter better than to improvise an imaginary clinic, and bring our patients before us as we see them from time to time, and decide in regard to their treatment as they come to us individually.

First, then, we have a nice child, accompanied by his mother, who has always come with him in former times. We have already filled two of his infant teeth. We have encouraged him to try to keep his teeth clean. We have tried to influence the mother to give him such food as would produce good bone as well as good muscle. The mother has seconded us in all we have tried to do for the child,—even brushing his teeth herself, where he did not seem thorough enough. The child is seven years old. Lower molars fully developed; upper ones coming well, but not as fully cut as lower; all perfect and promising. We dismiss him with praise for his care of himself.

No. 2. Eight years old. Has been taught to clean his teeth; infant teeth have never been filled; six-year molars all in position, and all sound; infant molars decayed on posterior approximate surfaces. We will cut these teeth away clean from permanent teeth, so that contact is completely removed, and food will be likely to be washed out by fluids taken in drink.

No. 3. Same age and same conditions, with the addition of small decay in centre of crowns of lower teeth. We will fill these with gold, if we are confident we can save the teeth permanently, otherwise with an amalgam, separating the infant molars from them, as in preceding case. We dismiss him, directing him to come at some specified future time.

No. 4. Same age and conditions, with the addition of decay in the upper six-year molars. Same treatment as in preceding case. In these cases, if we fill with anything except gold, it is with the intention of removing these fillings when the patient arrives at the age of fourteen or fifteen, and filling with gold, if we then think it possible and desirable to save them permanently.

No. 5. Nine or ten years old. Nothing ever done for him.

Molars all considerably decayed on crowns and anterior approximate surfaces; not a good prospect of saving them permanently. Fill temporarily, so as to give patient use of them till second molars make their eruption, when we shall probably be obliged to remove them.

No. 6. Eleven or twelve. Teeth in same condition as preceding case. At this age, if these teeth cannot be saved permanently, we should not hesitate to extract them at once, if they are troublesome.

No. 7. Is a different patient from any of the former ones, quite frequently, he is of Irish parentage; he is only seven or seven and a half; his six-year olds evidently decayed as soon as they came; never has cleaned his teeth; don't know anything about that matter. He has had tooth-ache; has come to have the tooth extracted. Six-year olds all decayed; lower ones look like two extinct volcanoes; grinding surface all gone; walls thin and brittle; pulp completely exposed. Of course we extract the troublesome ones, and expect to be called on soon for same treatment for the others. Those teeth are made out of pork, cabbage and potatoes. Comment is unnecessary.

No 8. Is fourteen or fifteen. Has in addition, twelve-year molars; has always cleaned his teeth well; teeth all sound all regular. A good prospect of saving all; none of course to be extracted.

No. 9. Same age, with like number of teeth, but in quite different condition. Teeth much crowded, six year molars all decayed on crowns, and also on approximate surfaces; twelve year molars show signs of decay on anterior surfaces, bicuspids beginning to decay on posterior surfaces. The best we can do for him is to extract all the six year old.

No. 10. Represents a class from fourteen to eighteen years of age, having all the teeth except the wisdom teeth. Teeth all in a crowded condition; canines all having an anterior projection resting on the lateral incisors and first bicuspids, with only about half space enough to allow them to take their normal place. Upper and lower are alike crowded, giving the lower jaw somewhat of a triangular shape. We will extract all the six year molars, and often these teeth will, in the course of a year or two, take their proper places along side of the other teeth. Sometimes, however, owing to the peculiar antagonism of lower with the upper, the bicuspids are held in position so that the canines are prevented from taking the desired place. In these cases, a little help from a plate and

rubber rings will be necessary, but this belongs to another subject.

No. 11. Same age as preceding patient. Here we have a case of atrophy, and honey-comb enamel. The incisors, cuspidati and six year molars are equally affected. The teeth in these cases are not always crowded, but I think we shall be more likely to save the teeth generally by extracting the six year olds. At the age of twenty and older, where all the teeth have come, and have not previously been subject to treatment, we cannot expect so much good from treating the six year molars as a class, and shall probably do as well to treat them as we do the other teeth, endeavoring to save all. If these teeth are extracted at too late a period, the remaining teeth do not approach each other in so complete a manner, the roots having a tendency to hold their position in the jaw, while the teeth tip over and incline strongly toward each other. This is particularly true of the twelve year molars; moreover, when the operation is performed too late, the alveolar process is absorbed away from the antagonizing teeth, rendering them liable to decay, and to become sensitive and troublesome, and to sometimes loosen and come out prematurely in after life.

Dental Therapeutics.

BY T. B. WELCH.

As tact is to talent, as wisdom is to knowledge, and as skill is to instruments, so is Therapeutics to Materia Medica. It treats of the use of remedies. In the more general application of the term, it determines the qualities of remedial agents and directs in their application to diseased structures. The now renowned Allfort, when making his maiden speech before his first debating club, said: Mr. President, the question is—the question before the house is—Resolved!—Resolved that there is more power in knowledge than in wealth. Now Mr. President—Mr. President, the question is—knowledge—I mean wealth—Which, which side am I on? Ah,—yes—well Mr. President, the question is—and in confusion he sat down. So Mr. Chairman, I feel upon this question. I have, after a manner, stated the question; but after this, all is confusion. I believe I attempted to make the Therapeutics of Medicine the subject of my thesis when I graduated in a medical college, but soon found myself beyond my depth, and changed my subject; but then I was green. I attempted afterward to fathom it before a Medical Convention, but soon began to choke and strangle, and would have been lost, had not some wise men helped me out.

Once upon a time, when the graduating class of medical students of one of the first Universities of London had assembled to hear the ripened wisdom of the sage Dean, and as a practitioner he was unrivalled, as a teacher he had hardly his peer, and as the editor of the Medico-Chirurgical Journal, his writings were read with reverence. "I verily believe," said he to these confident young men, who were now to step forth in their dignity, wisdom and completeness of their preparations to combat disease—masters of the situation—"I verily believe," said he, "that if all the physicians, surgeons, mid-wives, druggists and drugs were hurled from the face of the earth there would be less mortality and less disease among the people."

In our own profession, no less a light than Dr. Darby has said: "I am not sure but that there would be better teeth if there were no dentists. Two facts. 1st. A little knowledge makes us wondrous wise; but as those about us begin to think us really wise, we just begin to realize we are fools. 2d. There is much of solid worth in what is known in both the theory and practice of medicine; there are therapeutists who are eminently successful; but as a profession, there is a greater display of arrogant assumption than of well-developed facts, more empiricism than science, more failures than success."

Three cheers for a hard blow at the medical profession. What's that? With humility let us acknowledge that what can be said disparagingly of our medical brethren, comes home to us with increased emphasis. It is true they have lived longer and assumed more. If, by acknowledgment of their most learned and most skillful practitioners, medicine, instead of being a "noble science," has not attained to the dignity of a science at all—not even to a system—but is still in comparative chaos. Yet what have we, as a dental profession, done more than to borrow a few fragmentary facts from them, and dub them the Therapeutics of Dentistry. We have accomplished something more, but so little that instead of boasting, let us take the place of suppliant students, ready to learn at the feet of the most humble master. We are at best but good-natured children, contending over the little we think we know, and assuming a great deal we know next to nothing about, yet on the whole growing in stature and wisdom. Let me relate a conversation relating to a Therapeutical agent of our practice. It is amusing, and anything amusing is worth repeating.

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It is so soothing in its effect, and it so admirably overcomes inflammation without pain or danger, that it is a universal favorite. It is such an irritant that it is a nuisance to inflamed surfaces, sometimes involving the whole tooth in severe tenderness and congestion. Where the nerve of a tooth is nearly exposed, its only covering being a very thin wall of dentine, and that porous and weak, this agent is the very one to make the wall impervious and strong; it is such a devitalizer that it should never be exhibited where the nerve is at all near the surface. It hardens the surface of a prepared cavity so nicely, and is such a preserver of the tissue, that I

recommend dentists to swab all cavities with it before filling the tooth. It is such a softener of the dentine, and so sure in the end to cause destruction, that if it is applied to the tooth at all, it should be done before excavation is commenced, that all traces of it may be removed with the diseased bone. If the nerve is exposed, an application of it will be found a preservative to its vitality, and therefore should always precede capping. It is one of the best agents in the Materia Medica for destroying an exposed nerve. And thus we might go on with palpable contradictions. And what is the agent here in question? some new thing that dentists are experimenting with? No, it is Creosote,—one of the oldest and most used of our Materia Medica.

We might take up many other agents with a similar result; and yet, as I have said before, we are progressing. Old remedial agents are being more definitely and accurately classified, and new ones of decided character are being discovered. Careful study, close observation, and intelligent classification are doing much to give us a system of Dental Therapeutics that we shall yet be proud of. It is a pity there are so few at this work, that there are so many of us waiting for something new to turn up—anxious to announce it to our wondering patients as the last discoverery of our own prolific brain,—something that we can ride as a hobby and in time abandon because we are too lazy to sharpen our wits, and too changable to pursue with patience to its full development. Fellows, let us each, by feeling responsible for adding something new to enrich our store, and by assisting in the more accurate analysis and careful classification of old remedies, add our mite in maturing a system of Dental Therapeutics that shall be an honor to the profession and a boon to the world.

Dental Rat Traps.

BY DR. L. H. DELANGE.

As Dundreary says, "I-if there's any one thing I hate m-more than an-other it is a q-quick in my back." Now, if there's any one thing I hate more than another, it is a quack dentist, particularly an advertising quack. "Teeth! teeth! teeth!" "Cheap! cheap! cheap!" "Dollars! dollars! dollars!" "Three! three! three!" etc. "Preserve this, as we only advertise on Mondays." "This is an old established house," etc., etc. This advertisement, which is almost verbatim from one of our daily papers, proves these people either knaves or fools on the face of it.

1st. If they intend to advertise their wares, and only do it once a week, they must be fools, for having overleaped the bounds it is but a plunge from top to bottom.

2d. But; this advertisement is put in different papers each day in the week, which proves them liars, and a liar is a combination of a knave and a fool.

3d. They go on and say that it is an old established house; if so, why advertise, as a profession differs from a trade in this, that being established, it remains so without advertising. If established why work so cheaply. A Doctor of Dentistry, like his brother, the Doctor of Medicine, should "like good wine need no bush." A lady, an acquaintance of my own, passing one of these cheap John's, entered the trap through curiosity, and inquired about a three dollar set of teeth. John hem'd and haw'd, and advised her in a friendly way to try a more expensive set; but finding her persistent, informed her that he did not think they would suit her, as he was compelled to use second-hand teeth for that price. Nobody but a quack would have made such an answer, as we all know that teeth can be reworked, any impurity being driven off by the intense heat used in working up a case. Their advertisement has lately taken another form, they make presents to their patrons, as car tickets, chromos, etc. Persons calling with this advertisement clipped from the paper will find it good for one dollar. Teeth! teeth! Three dollars a set, warranted, etc. The

dupe calls, and is informed that they are just out of the three dollar sets, but if a ten dollar set is ordered the clipping will be good for one dollar, as if they kept them on hand like so much ready-made clothing, warranted to fit all sizes, and suit every buyer.

We have now arrived at the last agony: one fellow accounts for the excessive cheapness of his goods, by stating that he has a machine so large that he can manufacture three hundred sets of teeth at once. I would advise him to go to Utah. It is dear to employ these firms at any price. Their goods are manufactured solely for them, (I refer to teeth), by persons who can only procure poor material and labor. Their work proves unsatisfactory, their dupes are persuaded to try more expensive sets, etc., till at last, having become disgusted, they are forced to seek a responsible dentist; having lost their money, health, and time, and gained but experience, all will allow that they have paid too dear for their whistle.

Thus far we have touched on mechanical work alone, but is their operative branch of the business conducted on a broader basis, or with firmer principles? We should say not, on the mere point of misplaced economy. I will cite the single instance of the so-called cheap fillings. They say they will fill teeth with gold for one dollar; yes, even for fifty cents, but we know for a cavity of any size this is impossible. The foundation of the operation must be of some baser material, while the golden top is there alone. After having resorted to the aforesaid dodges, these fellows have methods of practice peculiarly their own. They would not hurt their patients, Oh, no! they might be thought rough; so they excavate a tooth till the patient experiences pain, when they immediately stop and fill, preferring to send away the patient with the tooth half excavated, than give them a moment's pain. Tender hearted creatures! yes, so kind are they, that they insert their artificial dentures over decayed roots; if brought to account about it, say it would injure the mouth to extract, etc., *ad nauseum*. No dentist has a right, morally considered, to allow a patient to have decayed teeth in his mouth, and thereby be an object of disgust to his friends, if not to himself. We have now the other extreme, that is extracting valuable teeth to facilitate work and get better prices. This is another moral wrong, for a patient in a dentist's hands is at his mercy, and he is bound, as a doctor and a man, to treat his subject as himself. Imagine how many valuable teeth have been lost, not only by wrongful extractions, but through sheer incapacity of the ope-

rator to cope with dental diseases. What educated dentist of the present day would fill a tooth over a dead nerve; and yet, these fellows will tell their patients that after the nerve is dead the tooth will never hurt them again. In ye olden times, teeth were not drawn, they were knocked out, and sometimes a portion of the bone came with them, but that was all luck as the song says, "They cursed their luck and went at it again." Step by step, the profession has advanced, and now, Dentistry which was a trade, has become a science. The poor wretch does not now enter the blacksmith's shop in fear, and let the wielder of the sledge hammer have a whack at the rebellious bone. Oh, no! "*nous avous change tout cela.*" The practice of tooth extracting, as you know, is being made a specialty by some practitioners. He enters, is received by a liveried lackey, conducted over soft piled carpets, to an elegantly furnished reception room, thence to the operating chamber, where he is received by the spotlessly arrayed tooth puller—takes gas—falls into a trance—hears a musical box, which he feels like putting his foot through—and finds his teeth where he wanted them—out. I do not say that these gentlemen are irregular dentists, far from it; but all that is necessary here, is to have a strong arm, and a slight knowledge of extracting instruments. All the delicate points of dentistry, the lights and shades, what should be done to a tooth, how to do it, what is best here, what should not be done there, all brain work, in short, is done away with; his object is merely to get the tooth out before the patient wakes up, and how he does it is often a matter of small consideration. Of course, many of our reputable dentists administer gas in their practice, solely for the convenience of their patients, and not for profit, as the working of gas on a small scale does not pay expenses, owing to the gas becoming stale and impure. In the face of this, these Jacks advertise this gas for a comparatively small price. How do they do it? They use up their stale gas in the following manner: they put a quantity of chloroform in the gas bag before filling it, thereby endangering the lives of their subjects, and we know several deaths have followed its use. Experience has taught us that one of the nicest and most trying of operations in the mouth, is cleaning the teeth. It takes not only labor, but that a great deal of time is consumed; and yet these hucksters of dentistry agree to complete this operation for the small sum of fifty cents, and in twenty minutes. There are but two explanations to this: one is they don't clean the teeth; the other, they use acids. By

the by, a point occurs to me which we should impress on our patients,—let them beware of tooth-powder solutions, preparations, washes, etc., which are extensively advertised; humbugs, every one of them, and take my word for it, they are recommended by paid parties, and by paid parties only. Better let them alone. Allow the teeth to rot by a natural process, let them gradually retire for want of care, but don't eat them away with acids; for you know a man must be very hard up to eat his own teeth.

We have now left the smooth and even plane of dentistry, as practiced by our liberal and left-handed brethren, friends of the poor, to work so cheaply, we might almost say patriots, as they sacrifice themselves for their countrymen. What a pity it is that they were not born a hundred years ago, so that they could have died for their country. Now all of the traps are not on the side of the dentists, I assure you. Dentists lose more, comparatively speaking, by dishonest patients, than any other professional men, as their material goes with their time and labor. The amounts are generally so small that it will not pay to try to collect them, and often they are cheated out of larger bills by patients disappearing before the work is completed; and when the work is finished, and they will not pay you, in the language of the Boss, "What are you going to do about it?" There are many other small dodges, such as shopping for dentistry,—having a little done here and a little done there, and paying nowhere, using responsible names, etc. I will not weary you with the tedious list, as I fear your patience is exhausted, and will conclude by saying, That for ways that are dark and tricks that are vain, the Heathen Chinee is not peculiar.

Dynamic Force,

OR

MAGNETIC INFLUENCE OF THE SEXES DURING DENTAL OPERATIONS.

BY CHAS. A. MEEKER.

There are among my confreres in this Convention whose practice reaches the score in years, some who have noticed and experienced certain peculiar forces emanating from the sexes during dental operations in the mouth. Some operators of a highly nervous temperament, after an operation in filling, (more particularly with gold) with a patient of the opposite sex in temperament, complexion and physique, over a difficult cavity, but that feel really prostrated at its termination; the whole energies, the brain, the will, nerves and muscles, are concentrated in the ends of the fingers from thirty minutes to two hours; the question comes, is this alone from the work the experiences of many decides. The operator may not feel like resuming, but the living comes from work, and the appointment book says next. The next patient may be like you in temperament and complexion. You go to work for thirty minutes or an hour, and at its close your feeling of prostration is gone. Yet if you are an honest dentist your brain and nerves are at as high a tension, and you have done as much work for one as the other. Patient No. 1 says, it was not really half as bad as she thought it would be, and she does not feel fatigued at all. No. 2 says, she will be glad when her work is all finished, it tires me out so, I am not fit for anything the rest of the day. Outside of the acute pain resulting in excavating, which our great progress in mechanism and improved aids enables us to reduce to the minimum.

Now, to the thoughtful dentist, there is more in *this* than mere words and feelings expressed. I think there is a dynamic force that has something to do outside of the position and manipulation in filling the cavities. What right name to give it in this day of progress, I do not know. One hundred and forty-two years ago, Anton Mesmer first proclaimed a

subtle force inherent in the human family, and called it animal magnetism; later, a commission of the Paris Academy of Sciences, gave it a quasi assent as a new science, calling it the same as Mesmer, and then dropped it; later, Baron Richenbeck, (whom you all know), a German chemist and scientist, made many experiments with what he called sensitives. Persons of both sexes who were peculiarly sensitive to the influence, he gave the name odic-force. Later still, Tyndall, Crookes and Varley gingerly touched it and called it physic-force; and as I have been looking at its effects from the dental operating chair, and so far know less than all of them, call it, as I said before, dynamic force. It may be somewhat foreign to dentistry, but as we have had considerable on dental subjects proper, this may not come amiss, and may bring out the experiences of our fraternity, whose practice reaches far enough back to be rich on this subject. My first attention to the subject as a force at all, came some six years ago, in reading an article in the Dental Cosmos by Prof. McQuillen. I have not the paper now, and remember it very faintly. It was noticing what he called electrical phenomena, conducted through the steel instruments, together with something about his wearing silk shirts, and attributing the force of the electricity to the shirts. (Prof. can correct me if present.) It was a thought which took root, but I never gave it much attention until February of this year, when a patient came under my care who had been under surveillance in a private insane asylum, and was only partially cured at that time. She was not a desirable patient, and had been under the hands of a number of New York dentists, whom I am certain had not inserted a filling they could themselves have been satisfied with. She was of medium height, light complexion, eyes which never looked in one place an instant. I commenced the excavation of a cavity in the right canine palitine approximal. She would not allow me to use the engine, and I was forced to use the excavator exclusively. I worked half an hour, and made hardly any progress on account of her restlessness, but I made up my mind I was going to do better than the rest that were inserted. Some twenty minutes more enabled me to shape it satisfactorily and apply the dam; and when I commenced the insertion of the gold her motions had increased so it was an impossibility; so I placed my left hand on her head and worked with my right, and a few moments later I was surprised to find her asleep. I redoubled my efforts with both hands, and at the end of thirty minutes (during

which I malleted five) I finished with the engine. I called her attendant in, who was surprised at her sleeping, and wakened her; she spoke of a pleasant dream, and wished for another appointment. After her departure, I was surprised to feel the utter prostration which came over me, having felt extremely well before. It then being three o'clock, it having been a one o'clock appointment, I felt as though I must lie down before feeling refreshed. Dr. McQuillen's article I then thought would make me notice more on the subject thereafter. I performed three operations for the same patient afterwards; twice I felt the same prostration. Before the third operation I thought of the non-conductibility of silk, and placed a silk handkerchief over the head (as I was obliged to keep it firm) and refrained as much as possible from contact with my left hand on the epidermis, the idea to me being they acted the same as a circuit poles of a battery; the filling was satisfactory, though taking a longer period, and the patient kept awake and wondered why she could not sleep again. I felt nothing from the ordinary, consequently I thought there was some force, call the name what you choose.

A young man, of a positive mind, for whom I operated on the lower molars,—Crown fillings the first appointment. Though the cavities were easy, yet I seemed to be retarded in my work very much; there seemed as outside influences would explain a want of confidence on his part in the ability of the operator, though there was none on mine, as I felt the confidence which work gives us. I finished satisfactorily, and the second appointment was ended in one-third the time. He was perfectly still; asked no questions, and made no comments, though relatively there was no difference in the depth or circumference of the last, and no discomfort with skillful cutting, as all were crown decays. The difference, as I said before, could be explained. First, by want of confidence; I think though at first he drew on my nervous forces, we both being positive, and in a positive condition. The second time, the forces were equally balanced, we were both in a negative condition.

Another patient—physician; weight over 200; opposite in temperament and complexion. Went to sleep on plugging (by hand) a crown cavity in the upper right first molar, a fatigue resulting afterwards, with no particular difference but what would result from ordinary work. I use a Morrison Chair, which you all know is iron. I thought it would be well to notice any difference in effects upon insulation. I placed

four individual salts under each foot; The first patient after placing, was a lady, dark complexion, quite excitable. After a filling in the right central, complained of a feeling of great lassitude and the extreme warmth of my rooms; my thermometer showed 68; month, March. The excavating and plugging was not painful; the time consumed, one hour. We were both feeling good at the commencement, and I felt the same then. I thought there might be something in the insulation.

The next noticable patient,—one whom I never like to see, let alone work for; who showed her temper whenever she could; one who stops every minute to wipe her mouth from imaginary contamination from the instrument; who must rest awhile, does not want the engine, nor the excavators, nor the rubber dam, and when it is on, persists in wiping her mouth and adjusting the dam at the moment you are conveying the gold to the cavity, and it gets in any place but the right one, and always does as much talking as she can. She gets me 40 horse-power nervous, and it seems to me I cannot satisfy myself in regard to my work, try as hard as I will. In this patient there is a positive clashing in the nervous forces, perhaps, more on my part than the patient's, and I feel the consequent exhaustion. When there is a feeling of perfect accord between both parties, I become absorbed in my work, lose my indentity, and do not care for intrusion; you are satisfied; your patient also; you say good-day, and feel in good condition; the conditions there, are a perfect balance of the magnetic forces. I have noticed a number of little facts regarding this subject, which seem interesting: that where the operator keeps in a positive state, and refuses to sympathize in his own mind with the patient, the loss of vigor is not so great, even after a protracted filling, and that no patient enters sleep. That the patients most liable to abstract vitality, are the ones opposite in temperament, vitality, complexion,—less or more vitality seems to make a slight difference. That succeeding a thunder shower, the operator is strongest in magnetic forces; and that what would seem strange, and for which I can offer no reasonable explanation, that before meals it is the strongest, and less directly after, the maximinum being the middle time between them all. It might be that the magnetic forces proceeding primarily from the brain, the process might abstract a certain portion.

As I have brought this subject before the Society, and we obtain our knowledge from the experiences and discussions of

others rather than ourselves, I would suggest for better noticing of this interesting subject to me, as I hope to others,—the placing of a sufficient number of squares of *glass area lights*, 2 ft. 1 x 1 inch thick, to form a floor upon which you could place your dental chair, and have sufficient standing room, making a complete isolation electrically of both patient and operator, and, in time know the exact laws which govern it, which of course will benefit us in increased vitality. As I close now, you will no doubt be able to give, in your discussion on this subject, more interesting facts than those given by myself.

Minutes of 1877.

REFORMED CHAPEL, LONG BRANCH,
July 18th, 1877.

The Seventh Annual Session of the New Jersey State Dental Society convened at 10 A. M., President Welch in the chair. Prayer was offered by Rev. Dr. Wilson.

The Board of Examiners were ordered to prescribe a course of study for candidates, and the Secretary to have the same printed in his official notices.

The Secretary was directed in the preparation of the annual programme to omit the title of Dr. from all names.

C. S. Stockton announced the deaths of S. E. Arms and R. W. Farr, and moved that a committee be appointed to draft resolutions of respect.

The President appointed A. W. Kingsley, C. S. Stockton, J. W. Cosad.

Drs. W. H. Atkinson, Marvin and Bonwill were introduced.

Wm. H. Dibble, Treasurer, read report of finances, showing a balance in the general fund of $12.19, and in the Board of Examiners' fund $80.

Adjourned.

Meeting called to order by the President at 2 P. M.

J. R. Goble reported on Dr. Reese's method of casting solid metal plates to rubber and other pin teeth, and it was thought to be very simple and efficient.

President Welch then read his annual address.

PRESIDENT'S ADDRESS.

Brethren of the New Jersey State Dental Society:

Another year has gone—a year of experiences and improvements—(never mind the heart aches and blunders) of successes and triumphs—(we'll not mention failures and defeats) and by these developments we no doubt feel we have added dignity to our standing and honor to our profession. Perhaps it is

well thus to indulge in a feeling of self-satisfaction, though to do so, we are obliged to forget weaknesses and follies and storms.

Let us prove by the worth of thoughts we can give and receive, that this year we are in advance of last.

It is a cause of humiliation that there is so much of the crude and chaotic in our position, but this admission will be profitable if it stimulates skill, sharpens wit and arouses talent.

It is well that children can enjoy the simple exhibitions of their ingenuity, which in after years are only remembered to be laughed at; and if we are growing as we should, we are like children—to-day proud of what to-morrow we shall have outgrown. It is only old fogies that have attained perfection.

Let us settle it in our minds that in our specialty we are children, and that our profession is in its childhood. In this view, let us see with what childlike simplicity we can receive instruction. A healthy growth will result.

We are called upon to record the death of one of the honorary members, Dr. S. E. Arms, of Elizabeth, and but two active members during the seven years of our associated existence, namely: Dr. Cyrus Pierson, of Roseville, and R. W. Farr, of Hackensack. Not one has been expelled for unprofessional conduct.

The influence of the Society has been salutary, both by preventing none but qualified dentists entering our ranks throughout the State, and in raising the standard of dental practice. Gradually, as the changes of time weed out the incompetents among those in practice before the passage of the State law, the commonwealth will be served by a noble, experienced and skillful body of practitioners. This, however, will require continued vigilance. All over the State mere cobblers will creep in to do us and the people damage, unless we are watchful.

During the year one has been prosecuted for practicing dentistry without previous diploma or successful examination before the State Board, and five have been made to desist by salutary warning.

The following named gentlemen have passed credible examnations, and have received certificates from the State Board of Examiners: Graham Matlock, J. A. Osmun, Henry Bently, A. M. Hedges, G. W. Carman, Henry Schreiber, M. H. Carpenter, J. F. Lummis. A few have failed to pass.

A few who have commenced the dental practice, ignorant of the State's restrictions, upon being informed, have cheerfully agreed to come before the Board at its present session.

It is to be regretted that a larger number of the dentists of the State do not avail themselves of the privilege of meeting with us; for certainly our gatherings are promotive of good to ourselves and to the State. Perhaps by a still greater effort to make our sessions interesting, we may draw more and more to our fellowship, until membership will be felt almost a necessity. Some are undoubtedly deterred by a sense of unfitness, and many are unquestionably below the standard required. I would not lower the standard for them, but as we make ourselves as an association felt as we may, there will be a laudable ambition to qualify themselves. In fact, every effort must be made to advance the dental practice of the State, and make it emphatically one of the learned professions.

We sometimes complain of shabby treatment. Our reputation is generally as good as our character, and our treatment as good as we deserve. The hod-carrier gives muscle, and receives pay for muscle; if we would receive the encomiums and emoluments of professional labor, we must give brains with our muscle, and give them in abundance.

And more: we may give our ripest thoughts, our greatest skill, and our most cultured attention to our labors, and yet not attain to the dignity of true professional standing. Skill is essential, but moral worth is indispensable. Without both we cannot receive deference, or even the respect, the very idea of a profession implies. There are too many in all the professions who suppose they can put their labor into the market and reserve themselves, and they are indignant at the public that looks behind the act to see the character of the actor. They reserve the right of selling their skill and squandering themselves, and scout the idea of private morals or even common decency being requisites outside their immediate association with their professional duties. Saturated with the moral and physical poisons of their private indulgencies, and tainted with the very atmosphere of their real lives, they wash their hands, wipe their lips, change their clothes, and then think they are transferred into professional gentlemen,

How illusory! From the unconscious influence reflecting and radiating constantly and irrepressibly, the real character becomes illuminated language, telling the most hidden secrets, displaying the most subtile motives, and publishing the very imaginings of the heart—how much more the usual habits and general status of the man?

We have all cloaks; and yet, hide our real character as we may, we are chiefly what we appear to be; though this appear-

ance is much more than we sometimes take it to be. Mere words, studied acts and assumed exterior may show what we would like to be, or more likely what we would have others believe us to be, but more potent than these for telling the tale and displaying the stains of life—and sometimes in spite of these—is this influence that comes from the real character, stealthily sculpturing the features, giving expression to the eyes, modulating the general bearing, and showing itself more in what we would hide than in what we attempt.

Thus we are what we make ourselves, not what we *ask* to be on call; what we have become by the whole conduct of our lives, not what we assume to be on special occasions. Where we go we must take our whole self, and with this self, for better or for worse, for harmony or repulsion, we must bring what that self has produced of loveableness or hatefulness, of drawings or repulsions, of aroma or stench.

One idea more. If we would gather about us those elements which enter into true professional worth—if we would be a power, and be looked upon as leaders of the people—for so professional gentlemen should be—we must be more than mere specialists. It is praiseworthy to know well our business, and in that business to be all that its highest claims imply; but, to stand among the people where and what we should be, our character must be rounded out by general information and culture, and we must be of the people, and with the people, in every good word and work. Our intelligence, usefulness and labors must be general; not to the neglect of our specialty, but in aid of it; we must subordinate all these things to *its* advancement and *our* individual advantage, pleasure and honor. Continual application to any specialty, to the exclusion of all other pursuits and interests, narrows the intellect, warps the judgment, perverts the taste, impairs the nerves, viciates the passions, deranges the digestion, and prejudices the general outlook upon life.

Let us then take pride in being stalwart, healthy, noble examples of intelligent, moral, useful members of society; and skillful, progressive, honorable members of our profession; leading the dental practice of the State gradually up to where it has been our aim from the first of our organized existence to bring it: shoulder to shoulder with the other learned professions—an honor to them all.

J. Hayhurst was in hearty sympathy with the general tone of the paper, but thought we must study specialties to be

perfect in our work. The essayist meant we must be a specialist in everything. Dr. Hayhurst begged to be excused for Part 2d of the History of Dentistry, and would present a paper on Dental Colleges.

Dental Colleges.

BY J. HAYHURST.

Dental Colleges are institutions of comparatively modern times. They are the out-growth of the necessities of the case. In a former paper, I commenced at the germ—so to speak—of the profession, and traced the subject up through the infancy of its existence, nurtured by private means, until it became strong in its own development. Quackery and a kind of mysterious arrangment could not give to the profession a character which would enable it to assume a respectful place among the liberal professions of the world. Thus a demand was made for a systematic means, for obtaining a thorough knowledge of all its various branches. Private instruction under competent preceptors is all right in its place, and absolutely necessary; but it does not reach far enough. A student, under the care and direction of a preceptor, in full practice on his own account, cannot give that attention to his student that is absolutely necessary; nor can the student expect to lay unskillful hands on the trusting patients of his preceptor. The patients might have something to say about that, *themselves*, and protest, in forcible language, at being turned over to the tender mercies of those unlearned in the profession.

The road out of this unsatisfactory state of affairs, was the establishment of Dental Schools. And in order to do this to the best advantage, it became necessary to seek the material out of which to manufacture the desired article. Men, prominent in the profession, and skilled in some particular branch, must be found, and when found, they must have inducements to give their attention, and time, and labor, to further this object. Such men were found, who associated themselves into a corporate body, similar to those established by the medical profession, from which, there was taken some valuable suggestions. In the formation of the *faculty*, as it is denominated, care is had to place the "right man in the right place," so that in teaching the special branch which is committed to

his care, he may the more thoroughly become familiar with it, in all its details. It needs no argument to prove that in this way a rigid systematic distribution of labors will be of the greatest value to the student. It is a teaching of specialty. "Keep thine eye single and thy whole body will be filled with light," is a command from *Holy Writ*, and is as applicable to us now, as it was in the day in which it was uttered.

The necessity of teaching thoroughly the *one* branch, naturally fostered a spirit of inquiry, that must result in a fuller undertaking of the subject. And Professors should be men of rare ability, well educated, and capable of grasping the great principles underlying their department; capable of giving expression in proper language; apt at illustration and explanation, industrious, enterprising and persevering. To use a common expression, "the bill has not always been filled." In the earlier period of our profession, some of the collateral branches which we now deem essential, had not been thoroughly taught. It was, therefore, difficult to find in the ranks of our profession, men capable of fulfilling the duties required in them. To supply this defect, it became necessary to enlist in the service, others than those belonging to our own profession. These men, good and true in themselves, did, and are now doing, what they think is right and proper, and are giving "value received" for their services. But they fall short, in one respect. They have no professional pride; they teach for their pay. This is not the kind of men to elevate the standard and force us up to that high position which we hope to enjoy among the liberal professions of our country and the world. No! Is it not time for *Dentists* to teach *Dentistry?*; that the welfare of our institution should be committed to the care of its own natural friends? But says one: "We cannot teach some of the collateral branches as well as they are being taught." Is this not a fallacy? My friends, look round upon those here to-day, and put your finger on one who is not able to practice his profession in all of its parts. If we acknowledge that we are incapable of teaching what we are practicing, then indeed we are to be pitied. What! acknowledge that a generation has passed under the influence and teaching of Dental Colleges, under the protection of benign and liberal laws, passed, in some cases, for our own special benefit and protection, and yet, under all these favorable circumstances, have not been able to furnish a faculty capable of teaching, and thoroughly too, the art and practice of our profession. If this is so, then indeed it is a very

humiliating admission, and ought to be obviated as speedily as possible.

I have seen in my mental vision the Dental College of the future. It is composed of dentists who are thoroughly imbued with the importance of their mission, fully acquainted with their special duties; who have at their command a full and complete collection of materials, machinery, or whatever else is requisite for the full illustration and explanation of their several subjects; in a building, large, commodious and well-ventilated, and supplied with everything conducive to health and study.

The Course of Study is so arranged and classified that it will not be necessary that the several classes shall hear on the different courses or seasons,—a mere repetition of the lectures from season to season, but that the subject shall be treated in such a manner that the first Course shall have suitable discourse and illustration, while the second shall have a more advanced treatise, and a third still more; and so on, progressing and improving, both in matter as in manner, perhaps never reaching *perfection*, but always advancing, — upward and onward.

Dr. Marvin considered the paper excellent, and spoke of the utter deficiency of a great many dentists and students of their knowledge of the English language.

Dr. Atkinson: in most places the dentists are too antagonistic. Colleges and clinics will in time raise the standard of excellence; the time will come when all dentists will have a thorough knowledge of the structure of the mouth; when you diagnose a case be able to tell the whys and wherefores.

Dr. Bonwill spoke concerning the improvements in mechanical dentistry.

Dr. Atkinson heartily endorsed all movements to the application of mechanics to lesson the labor of dentists. Machinery is negative; brains, in using them intelligently to bring forth their highest powers, was what was needed.

A. W. Kingsley's paper, on "Our Duty to Our Patients," was passed.

C. S. Stockton stated that he had taken the liberty to invite Dr. C. A. Marvin, of Brooklyn, to be present, and moved that he be now requested to read his paper on "Mechanical Dentistry."

The Comparative Importance of Mechanical Dentistry.

BY DR. C. A. MARVIN.—BROOKLYN.

There seems to be a growing tendency to exalt the department of our profession known as operative dentistry, to such a degree as almost to eclipse its kindred department, mechanical dentistry. The great bulk of papers written, of ideas advanced, of experiments tried, are in the interests of the former. Indeed, it is quite rare to hear an essay read, or any well digested thoughts presented on the subject of the latter department. We do hear of conferences being held for the purpose of devising means of relief from unjust taxation; we do hear of labored and expensive arguments being made in United States Courts; and occasionally we read an elaborate protest against patents and a rebuke of patentees, and these productions generally refer to some detail connected with the mechanical department. But we do not hear much said in Societies on the subject of constructing artificial substitutes for lost teeth.

Now, this neglect of the department of mechanical dentistry must arise either from ignorance of it, or a low estimate of its value; and, as gentlemen would hardly consent to be pronounced ignorant of this department, it must be that it is considered of minor or perhaps little importance.

Indeed I think I may go a step further, and assert that the inevitable inference from the expressed sentiments of dentists, is that mechanical dentistry *is* deemed of secondary importance. It is no uncommon thing to hear gentlemen of eminence in the profession, say: "I pay no attention to mechanical dentistry in my office"; "I make no sets of teeth"; "I have no laboratory nor furnace, and do no plate work."

Young practitioners, hearing such remarks, naturally conclude that the higher one advances in professional standing, the less attention he is expected to give to mechanical work. Or, in other words, that the mechanical business one does, is a

measure of his eminence,—if he does much, he is not to be rated very high; if he does little, higher; if none, he is well up in the scale of professional dignity.

Now, I contend that this rule of judgment is all wrong; that the sentiment behind it is wrong, and that the fundamental thought—the premise on which it is based—is wrong. I hold that the amount of artificial work which a dentist does, is *not* a proper test of his professional eminence; that the idea held by any practitioner that it is a little beneath him to do mechanical work, is a false idea; and that the estimate of the mechanical department, as being below the operative in importance, is a false estimate.

Just here I wish to insert a word as a protection against misunderstanding. The verdict of an audience is often very singular and unjust. If one advocates any given idea vigorously, he is apt to be set down as opposing all others. This is not fair. I am not, therefore, to be counted as decrying the operative branch, when I elevate the mechanical. They are not in antagonism, like the opposite ends of the balance,—one needing to go down when the other goes up; but they stand independently—to rise and fall each for and by itself. What is the domain of mechanical dentistry? What is required of it? What knowledge is needed to meet the requirement?

These will be found, I imagine, rather important questions, and their careful answer will comprise what I design to advance in support of the importance, the dignity of mechanical dentistry.

First, then, the domain of mechanical dentistry is the human mouth, with its organs of mastication, its frame-work of bones, its roof, walls and adjacent tissues, hard and soft.

Second, It is required to supply the place of these,—any or all of them, when lost by disease or accident, with artificial substitutes, so skillfully constructed and inserted that the lost appearance and functions shall be restored.

Third, The knowledge needed to meet these demands is complex in character and large in extent. It embraces: first, physiological knowledge, in order to determine what mechanical appliances may be worn in the mouth,—their size, shape, bearing and general characteristics, without interrupting the physiological processes of the parts involved. In other words, without creating a diseased condition of things. Second, a knowledge of physiognomy is needed, that the feature entrusted to the hands of the dentist may be made to harmonize with the other lineaments of the face, and may

express, in concert with them, the traits of character which they are supposed to denote. Third, acquaintance with the philosophy of the human voice enters into this needed knowledge; at least so far as this,—the relation of the teeth to speech. This is a most interesting topic, and would afford abundant scope for a paper upon itself. I can, however, only allude to it so far as to prove and point the assertion just made.

That the teeth do affect human speech needs no proof in words. It is demonstrated every day to the hearers of toothless speakers and to the speakers themselves. But the particular effect upon vocal utterance produced by particular teeth, and the varying effect resulting from variations in the size, shape, situation, length, inclination, separation from each other, requires study and close observation to understand; study and observation worthy of any mind; ennobling to any mind. Knowledge of this kind is not "picked up." It is not easily gained. As I have said, such study is ennobling to any mind, so I add that it requires a good degree of mental power to pursue it to any successful end. As it is not "picked up," but gained only through effort, it can be gained only by such as are competent to make the effort. One moment's reflection will serve to show how much there is involved in this one variety of knowledge. There is the matter of ease or difficulty in speaking, as respects enunciation; the matter of weariness, occasioned by the excessive expenditure of breath; the matter of nervous distress, resulting from a sense of confinement of the tongue and its effect, constraint; of mortification, as grimaces and contortions are felt to have resulted from a vain effort to forcibly pronounce labials. There is the retching sensation as the tongue strikes the back edge of the plate; the thin tone or the full tone, the piercing metallic tone or the resonant tone perceptible clearly both to the hearer and the speaker, and resultant upon the construction of the denture. There are the hiss and the cluck, the sound ventriloquial and the surface clatter; all results of artificial dentures. These are considerations of moment, and the knowledge that embraces all these details, that can assign a reason for each effect and apply a remedy, is no secondary acquirement to that of filling with gold a cavity in a natural tooth.

The preservation of the natural organs is our first consideration. And why our first? Because they come into our hands first, and we accept the general principle that the machinery which nature has put into our bodies is better for us than any that can be substituted. Therefore we expend our best efforts

to preserve these natural organs, and I may add just here, parenthetically, that we have abundant reason to congratulate our profession on the success it has achieved in this direction.

But the time comes when many of these natural organs fail and are lost. Of the reasons of their failure and loss, it is not the province of this paper to speak. That is another subject. Inherited or acquired disease, imperfect formation, personal neglect, accident, improper treatment or uncontrollable tendences to dissolution, may be named as some of the agencies which are at work in the interests of destruction, and which the dentist is to combat. Now, when the time has come and the teeth are lost, through whatever cause, there occurs a breach which must be filled. Health requires it; comfort and appearance demand it. The operation of the machinery is disturbed, the whole animal economy suffers. Here at once is seen the province of the mechanical dentist. In that province are embraced precisely the same main ends of pursuit as lie before the operative dentist, viz: health, comfort, beauty. The highest manipulative skill in the specialty of inserting gold immovably in a cavity, will not avail here. The acutest ability in the matter of diagnosing ossification or inflammation of the pulp, will not meet the case now. The most consummate skill in building up artificial golden crowns on natural roots, is now of no value. The most painfully thorough scraping, rasping and sandpapering of roots, is as useless in the emergency now presented, as the expertest operation for lithotomy. Operative dentistry cannot meet the case; dental surgery fails as truly.

And yet here is a great case to be met, and some one must meet it. And he who can meet the case is a dentist; for it is a dental operation that is needed.

What are we to conclude, then, when one says, "I pay no attention to mechanical dentistry?" Either that he undervalues this department, or is a fractional dentist, and cannot do it. Now, a man who cannot do a thing himself, cannot instruct another how to do it, and the attempt to do so, only brings upon him ridicule well deserved.

To illustrate this question of importance, let us suppose a case. A lady, whose upper teeth are lost, applies to one of these gentlemen who make no artificial work. He finds a small cavity in one of her lower teeth. He says, "Madam, I can, with engine and mallet, rubber dam and assistant, fill that small cavity, but I cannot supply you with any artificial substitutes for the teeth you have lost." "Why not, doctor?"

she inquires. He must either answer, "I do not know how to make them," or, "I consider that department less important, lower-toned than the operative, and do not practice it." And how quickly would come her answer to the first, if she spoke her thought: "Sir, you are not qualified for you calling; you are only a fractional dentist." And to the second: "What! the supplying of all these lost teeth, the restoration of my lost expression, the furnishment to me of the means of acceptable speech, of mastication; these of less importance, these less dignified ends than the driving in of a little gold in a cavity, made by machinery? Oh no, doctor, you surely cannot be so far astray."

Now let it not be thought that I desire to belittle operative dentistry by this comparison. I do desire to exhibit the idea I am attacking, in all its littleness; hence I have chosen an example which will best show it. Nor is this unjust; for I could cite instances where this very illustration would hold good. Instances where operations of the kind I have named, seem to be regarded as appropriate fruit and proof of a professional name and professional ability. Now, if the operator himself has such an opinion, I have done my imaginary friend no injustice by instituting a comparison in which that opinion is exposed to view.

I belittle operative dentistry? I, on this page, commit the very error I have deprecated on a previous page of the same paper? I think not. After the years of practice I have had, I could hardly fail of understanding some of the resources of this department. I appreciate its difficulties, for I have encountered them; and its triumphs, for it has been my privilege to record some of these. I know the field of operative dentistry is large. Its treasures are deep hidden, but when found, are rich; its mysteries profound, but most satisfying when brought to light; its reach wide enough to employ the fullest stretch of the human intellect; the achievement within its scope, grand, wonderful, beneficial.

Certainly no one will believe that I think all of operative dentistry is embraced in the single example quoted. No; and while by it I hold up the man as shallow in judgment and partially furnished, who disdains mechanical dentistry, I now put him in the pillory of his own department, and say, that he who selects such an operation, and builds upon it his claim to a professional name, is like he who writes himself a scientific oculist, because he once removed a locomotive cinder from a conductor's eye without ruining its sight. He is not just to

his vocation. He does not measure himself by its great operations. He does nothing to dignify it, nor to prove that he appreciates its scope. He is held up and borne along by it, but never fails the while to cry out proudly, "I fly! I fly!"

But perhaps there may be something of false pride that prompts this estimate of mechanical dentistry. It is a very acceptable appellation, that of a professional gentlemen; while to be called a mechanic, is a little offensive to high-toned natures. The same persons would esteem the name "artist," very highly. To speak plainly, mechanical dentistry is looked upon by some persons as a trade, and is therefore shunned. I have already spoken of some elements contained in it, which, in my judgment, give it an altitude in point of respectability, quite sufficient for any sensible mind.

Let us look at it in another light. Painting is called an art. Sculpture is also called an art, and the painter and sculptor are "artists." The name "artist" is an honorable name. Now compare the work of these with the work of the mechanical dentist.

The work of the last is to restore nature's perfection. Nature is God; nature's work is God's work. To create a human face, with its matchless combination of features, its endless variety of expression, its exhaustless resource of silent eloquence; to shape into forms of captivating beauty, of noble resolution, of unbending will; to write upon it, amiability, sincerity, benignity, in unmistakable characters,—this is the work ofthe great Creator, andis marvellous in our eyes. Now, when this wonderful work is disfigured, distorted, ruined, it is the specific work of the mechanical dentist to restore it. He is to bring back lost expression, to convert hideousness into grace, to change the cadaverous look, indicating proximate dissolution, into the roundness of vigorous health. This is his work. Is this less noble than to copy that face on canvass? The mechanical dentist is in a degree a creator; the painter only an imitator. Into this department enters the most delicate conceptions of beauty and grace. A lady patient enters an office, a stranger to the dentist. She has no teeth. Her face is a distortion; nothing is written upon it but repulsion, as it first strikes his eye. But as he studies it, feature by feature, line by line, he sees the beauty that once resided in that face, and his soul is filled with enthusiasm as he contemplates the great work which is given him to do. He is to re-create that face, to re-plant that vanished beauty, to call back the changeful expressions now fled, that once played over

those features. This a trade! an ignoble work! an unimportant undertaking! a vocation inferior to that of filling teeth! Absurdity, thou art here fully illustrated!

With a brief allusion to the natural effect of such a course of fractional dental practice, I will dismiss this subject, although it opens wider and wider, the farther we enter and explore it. One effect is to throw this most important branch of dental practice into incompetent hands, and degrade it. If the best practitioners cast it aside, some one must take it up, for natural teeth will be lost, and artificial teeth must be had. So inviting and lucrative a business will not be neglected, and it is likely speedily to become just this— a "business." Bereft of the support of cultured men, and thrown into such hands, it soon degenerates, loses its artistic character, its professional stamp, and in its fruits, bears the same relation to scientific mechanical dentistry, that the gaudy daubs in auction shops bear to a master-piece of Gerome or Meissonier.

Another effect is to lessen if not destroy the interest of students in this department of dental science. When they see older practitioners one by one, dropping artificial work, and by their words and air casting discredit on it, they naturally feel that any great amount of study expended on mechanical dentistry is labor lost, as they too shall discard it as soon as they attain to a good degree of standing themselves.

Thus is damage done to a noble, dignified, scientific vocation, and to the public who require its good offices. And so is damage done to the very professional men themselves who discard this branch of their pursuit, for they soon become fractional dentists, swelling the ranks and assisting to bolster up those who were never anything else. They encourage partial, fractional (I like the word) education, and assist in letting loose upon the community a horde of half-fledged practitioners calling themselves dentists. Their own abilities shrivel and contract by being confined to one groove, till in time they are unable to tell what constitutes a perfect denture or how to make one, or distinguish one when they see it.

If it be pride that prompts to this course of partial practice, it is a false pride, unbecoming and injurious. If it be because the mechanical branch is deemed less important, it is false judgment, and the opinions of those for whom dental services of both kinds have been rendered, will confirm the assertion. If it be because there is thought to be less of strict professional attainment in it, there has been a failure to perceive those features in it which this paper has attempted to set forth;

features which necessitate and illustrate keen perception, æsthetic taste, close study, careful observation, artistic skill, a knowledge of profound philosophical principles, together with that mental grasp of executive means, by which the ideas conceived within, are appropriately, scientifically and successfully put into tangible shape and made to bless mankind.

J. R. Goble said—in all the papers read before Dental Societies few were on Mechanical Dentistry. The truths Dr. Marvin's paper presented, in new lights alone, paid him for his trip to Long Branch.

C. S. Stockton said he had heard the paper read at a recent meeting, and thought so well of it, he desired the members of this Society to hear it. It was the best he had ever heard. A vote of thanks was tendered Dr. Marvin, and he was elected an Honorary Member.

F. C. Barlow read his paper on the same subject.

Mechanical Dentistry.

BY F. C. BARLOW.—JERSEY CITY.

Mechanical Dentistry covers a great deal of ground, inasmuch as it embraces all the different modes of manufacture of artificial dentures as substitutes for the natural, and could therefore be made a matter of much interest and length did time permit.

It would seem as if this branch of our profession received less attention than its *importance* demands, and the *high state* of *art* and *perfection* to which it has attained entitle it; even among the profession it is treated by some as a matter of minor consideration, and left almost exclusively to the care of their mechanical workmen, who never see the patient, and consequently have nothing to guide themselves by in the fitting and adaptation, but the plaster models and a few verbal instructions; whereas, a close study of the configuration and expression of the face is necessary to enable one in their selection and arrangement of the teeth to approximate so near to nature as to bid defiance of detection.

To go into all the minutiæ is unnecessary, as there is a certain amount of routine work which all have to follow, be the final result good, bad or indifferent, according to the taste, skill and mechanical ability of the workman.

I shall confine my remarks to the manipulations in the making of metal plates—that being a specialty wherein the dentist can show the most ingenuity and artistical workmanship.

The first thing requisite to success is a perfect impression, for the obtaining of which various substances and compounds are used; wax and plaster, separate or in combination, are, however, the articles mostly in use, with a preference by the majority, I believe, for plaster. I claim, however, that with care, perfect impressions can be taken in pure wax, and that with much more comfort and cleanliness to the patient.

In cases where the irregularities are very marked with deep undercuts and prominences, or, the case being a partial one, and the natural teeth inclining inward, the impression may be taken in sections, thus: fill the cup with wax, (having first oiled the cup to prevent the wax sticking to it,) remove the wax, and with a warm spatula cut it diagonally into two or more sections, replace in cup, taking care to place between each section, to prevent their adhering together, a piece of thin paper; then place in the mouth, taking the impression the usual way; remove the cup, take the sections out one by one, replace in the cup, and fill in for plaster model.

It sometimes occurs that these cases have to be moulded with cores, but generally with the aid of a Hawes' flask perfect dies can be procured.

Oil should be used in the preparation of the sand for moulding, as the advantage is great over the use of other fluids, inasmuch as the metal can be run immediately, without any danger of having your die spoilt by the generating of steam.

Zinc for the male, and lead or equal parts lead and tin, are the metals used for making the dies. If the zinc be of the best quality, run into the mould at the proper consistency, and not having been overheated, the result will be a die presenting a bright, smooth surface. If a small piece of new zinc be added each time of fusing, it tends to keep the mass nearer the proper standard.

In cutting out the plate, do not cut scant, as all the piecing only adds to the labor and detracts from the appearance and finish of the work.

The plate should be often annealed during the working, so as to render it malleable.

Commence the swaging on the end of a pine block which has had its fibres softened by laying in water for a short time; strike your die a few slight blows so as to sink it into the wood, or take a blunt instrument of some sort and bruise the wood

to about the shape of the ridge of the die, after which place the plate between the block and die and swage into the wood; in this manner, with the aid of a horn hammer, the plate may be gotten into good shape, and well worked up into the palatial arch. Now place between dies, having first oiled them to prevent small particles of the base metals adhering to the plate, and finish swaging.

With good judgment in the matter of planishing, the plate may be brought down to all irregularities, and without being obliged to make cuts at various angles on the outer edges to prevent its crimping and doubling over.

If a partial plate, take a chasing tool and trace around the bicuspids and molars a collet, in which flow solder; this gives chance for a fine finish, and does not wear on the natural teeth so much to their detriment as a single thickness of plate would.

Air chambers in metal plates should be invisible, as it were. This can be accomplished by taking a piece of pasteboard, cutting it to the desired size, and swaging it between the dies; the paper will invariably cling to the male, the outer edge being spread out to a tissue-like thinness. Place the plate in the counter die and swage; this gives the desired vacuum—all that is required—dispenses with the inverted "Mansard" attachment, and lends a lighter and more pleasing effect.

Now follows the fitting of the plate to the mouth, and the fitting and adjusting of the clasps. And here I would take occasion to say that there are too many practitioners who cling to the old practice of clasping artificial dentures to teeth, and thereby produce pernicious effects in the natural teeth. Occasionally we find cases where clasps seem to be of the greatest advantage in the retention of plates; but even in the most of such cases, they need be only temporary, serving the patient until such time as they may have become accustomed to and acquired control over the plate. This is often fully illustrated in the fact that clasps are often broken or wrenched off, and no inconvenience arising therefrom, no attention is given to their replacement. The injury produced to the teeth is not entirely occasioned by the friction, but is partly the result of chemical action on the small particles of food which find lodgment around the clasps, tending to render them offensive and unhealthy, and requiring for cleanliness much care on the part of the wearer.

The fitting finished, the articulation may be taken. If for a partial set, the operation is very simple, the only care being to

have the teeth in the opposite jaw antagonize correctly; if a full piece, a separating file, about the width of the required bite, slightly warmed and inserted edgeways into the wax, will serve to facilitate in the handling, and also prevent a too close closing of the jaws. On the taking of a correct articulation, depends a large share of success. This having been satisfactorily procured, place plate on plaster cast, mount on articulator, fill in opposite side, and upon removal of wax, you have a *fac simile* of the mouth closed.

Reference having been paid to the shade, shape and size, the teeth selected, although at the expense of a little extra labor, should not be wanting in material, as adding not alone to the strength, but cleanliness; for if fitted down closely to the plate, the space for deposits is diminished.

The joints should be ground to fit together closely, the gums to a uniform thickness; if a full upper, the teeth should incline toward; if a lower, they should diverge from the medium line. Having been arranged on the plaster articulation, they should be fastened to the plate by some adhesive substance, and tried in the mouth, thereby making certain that they are in the exact position required, and such alterations made as are deemed necessary.

If a border is to be placed above the edge of the artificial gum, the teeth are inserted in plaster, points downward, just deep enough to hold them in position. When the plaster has set, heat the plate lightly to remove it. Cut a straight strip of gold (gage 32) of the requisite length for the border, and commencing in the centre, planish the strip to fit the plate close to the tops of the gums. When closely fitted, clamp with small wire clamps, and solder. Care must be taken in heating the plate gradually and regularly, so as not to warp it. The solder must be laid on the plate, and drawn down into the border with the blow-pipe, otherwise there is danger of burning it. The ends of the border are to be fitted around the last molar, ready for attachment to its backing when the teeth are soldered to the plate. This finished, the plate is warmed enough to make it stick to the wax again, the whole withdrawn and invested in plaster mixed with sand and asbestos, preparatory to backing and soldering.

The hinges should be of a uniform heighth, fit closely to the plate, and not bind when slipped over the pins. The pins should be split sufficiently to hold the linings close against the tooth. Borax the pieces well, and lay the solder on.

In heating up, first place the piece where it can dry out with

a moderate heat. Then transfer it to the soldering pan, in which is two or three pieces of burning charcoal. Cover it up with unlighted coals, and with a fan gently agitate. By this means the whole mass is gradually ignited, the piece is heated to such a point and so evenly that little exertion is necessary, the solder following the flame of the blow-pipe in whatever direction you may choose to lead it. The soldering pan should be of the size and in the shape of a good large bowl; made of iron wire, with a sheet-iron cover. This, placed over the pan, smothers the coals, and the piece is cooled with seldom a fire crack.

The finishing up of the work does not need to be gone through with, as all are conversant with the *modus operandi*. There is, however, an opportunity for the finished workman to show that his production is not only one of utility, but one of artistic beauty.

Dr. Bonwill considered mechanical dentistry as the basis of all dentistry, and thought a student should not be allowed to graduate without being perfect in that branch. He was a mechanic and was proud of it. The profession seemed afraid to touch the subject, and he hoped the fraternity would give it more attention hereafter. He made reference to his anatomical articulator, invented some 14 years ago, with a lateral movement, and explained his method of getting a true articulation and the scientific law of the same.

Mr. Davidson, of London, England, exhibited models of a new articulator.

Adjourned.

THURSDAY, JULY 19TH.

Session opened by the President, at 10 A. M.

Jas. G. Palmer, G. S. Matlock, J. A. Osmun, H. A. Hull and Henry Bentley were elected members.

J. R. Goble, Chairman of Committee on Dental Appliances, reported the successful use of a new rubber dam clamp, one for every tooth, a cheek distender, retaining screw and articulator.

C. S. Stockton, reported the following:

WHEREAS, We have heard of the death of Dr. R. W. Farr, an active member of this Society, therefore, be it

Resolved, That in his death this Society has lost a valuable member, and the community a worthy citizen, and we greatly deplore his loss.

WHEREAS, We have heard, with regret, of the death of Dr. S. E. Arms, of Elizabeth, who was an honorary member of this Society, yet took an active part in all its deliberations. He was one of the oldest dentists in the State; he was educated with a view to the practice of medicine, and did so practice for a number of years, but circumstances caused him to turn his attention to the practice of our specialty, in which he became quite successful, and was held in high esteem by his dental and medical brethren, and by his patients; therefore, be it

Resolved, That this Society has lost in his death a valuable member, and the community an intelligent, honest, upright citizen.

J. R. Goble and C. S. Stockton made remarks eulogistical of both gentlemen.

On motion of C. S. Stockton, it was moved and carried, that hereafter the Board of Examiners at the Annual Session of the Society shall meet the day previous, for the examination of candidates, and that the Secretary make such preparations as shall be necessary to insure the candidates being on hand. He prefaced his remarks with a statement of the large amount of work the Board did, which prohibited their taking part in the proceedings of the sessions.

J. W. Clark presented the following resolution, which was passed unanimously:

Resolved, That J. Hayhurst be appointed the representative of this Society to take charge of all cases of the violation of the State Law in relation to the practice of dentistry in this State; that he present and prosecute the same before the proper legal authorities, and that any expenses arising from the prosecution of the same be defrayed by the New Jersey State Dental Society; and that the Secretary have printed the proper legal papers delegating to J. Hayhurst said authority.

NOTE.—The Secretary, in conformity with the same, has presented to J. Hayhurst a paper covering said resolution, upon which is impressed the Seal of the Society, and likewise caused to be prepared (through C. S. Stockton) a blank form which enables J. Hayhurst to make deposition of complaint before any Justice of the Peace in the State for infraction of the State Law.

A. M. Hedges, M. H. Carpenter, G. W. Carman and Stewart McNaughton were elected members.

Dr. Wm. H. Atkinson, in response to an invitation, addressed the Society on the subject of Tumors and Abscesses, as follows:

TUMORS AND ABSCESSES.

BY DR. WM. H. ATKINSON.

Having been posted to speak to you on the subject of Tumors and Abscesses, and being without any written preparation, we must depend upon the inspiration of the moment to check things, new and old, out of the registered observations in memory of a long and earnest career of experiences, of the endeavor to understand the progress on which morbid growths are dependent for their existence.

The greatest hindrance in the way of our advancement, has been the assumption that we can know beforehand the careers of the particular currents of nutrient activity that constitutes the antecedents of the healthy and unhealthy foresteps of appropriation of the pabulum, or juices of the flesh, from which the various tissues are supplied.

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The diagnosis of Tumors and Abscesses was nothing more than a jumbled mess of guesses, before the microscope was given to our hand. By it we are enabled to *certify* the kind of tissue involved, and *decide* whether it is *homologous* or *heterologous* in the character of its cells, which are the seat of the normal or abnormal conversion of the pabulum into tissue.

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The ability to understand the difference between health and disease, involves the knowledge of *embryology* and the *currents* of *energy* that favor or hinder the *type* (or ghost) in building the machinery of the body, out of the products of the two secretory apparatuses known as the *parents* of the *germ, resultant upon the confluence of these two products*, under such circumstances as enable them to blend into the basis of a new individual—endowed with the *inheritance* of the "registered past molecular experiences of the parent stock" from which the germ springs.

All *re*-productions of lost tissues repeat the roll of the *pro*-ductions of the tissues at behest of embryological law, with the single exception of the *renewals* by normal transit and shedding of the elements of the tissues by the acts of alternations of generations of these factors of nutrient functions.

The manner, mode and degree of dominance and sub-dominance of the currents of ancestral energies lays the foundations of the individual characters of the offspring as to race, sex, temperament and special idiosyncrasy.

The efforts of the early observers at understanding and nomination of the processes they witnessed in the study of natural history, are no more to be ignored or condemned as mere "blunders" and "guesses," than are the deciduous embryonal bodies and processes to be set aside as fore-steps in alternate productions and destructions of preparatory stages of molecular mass and its differentiations into the various tissues and organs as special factors of special departments of physical and mental functions.

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Every motion or emotion capable of producing or modifying the currents of pneumatic, vascular, neural or psychic-flow, may be the starting point of aberrant building or nourishing currents.

Therefore, the food we eat, and the circumstances under which we may be at the time of partaking of it, are essential studies, to the revealments of healthy and unwholesome modes of the digestory and appropriative nutritive processes. When all the currents are duly satisfied, we attain sound factors of function. When a few of the currental-bonds are unawakened or defected, we have weak or debilitated tissues. When several of the bonds are suppressed or perverted, we have sick tissue-elements. Sound tissue must be made *weak* before it can become *sick*, and the inflow of energy must be continuously inhabited to the sick territory before it can die and be dissolved; hence the paramount importance of good food and completeness of the digestory process.

The supply of papulum being the indispensable prerequisite to growth of all tissue, normal or abnormal, it is evident that cutting off of this current of supply is the most simple, direct method of securing the death and removal by absorption of the territory concerned.

The difficulty, not to say the frequent impossibility, of our controlling the entire channels of supply, renders this method incomplete and less radical than extirpation of the entire heterologous growth, by surgical operation.

Yet, in some localities, the best we can do is to obliterate the principal channels that supply the pabulum of the part.

This may comfortably prolong the life of a patient we may be unable to radically cure for the reasons stated.

* * * * * * *

Two sets of principal currents lay the basis of all direct and reflex movements of the circulations of the fluids of the body. They are interdependent, co-efficient necessities of somatic and psychic activities, and are called vascular and neural-currents.

The vascular is composed of arteries, capillaries and veins. The neural consists of a "neural-sea" of "molecular-mass," or "mucous-mass," and an efferent or sensory current, and an efferent or motory channel, which meet by finely divided filaments in the "neural sea." These three currents constitute the machinery of direct and reflex nerve currents, which set up and maintain the vascular circulation and pneumatic respiration that operate somatic, psychic and locomotory processes.

The rapidity with which the circuit of a current is accomplished, will modify the effect of a particular function within the range of time normal to it.

That is to say, psychic circuits are effected in very short periods of time. Reflex nerve circuits are also exceedingly rapid, so much so as to make it difficult to measure them without very complicated machinery by which to make the observations. The neural circuits which impel the heart-beats and arterial waves, have a large range of difference of time in which they are normal to different individuals.

Respiratory circuits vary largely in both classes of breathers, viz: water-breathers and air-breathers. * *

Breathing may be said to be the starting-place or point of impulsion of all the circuits,—psychic, somatic, organic or differentially nutrient. * * * *

It is beginning to be doubted of late if any circuit is ever completely intermitted so long as the individual lives, after it has once been freed from the respiratory gyres of the parent that bore it, and been set up on its own account by direct inspiration, placement and expiration of the pneumatic gyres that thereafter propagate and maintain all the currental circuits belonging to it as an individual.

The neural circuit that incites respiration, as compared to that which produces the diastole and systole of the heart, is as one to four or five. Circuits of energy, that operate the respiratory and circulatory machinery of lung and tube and heart and blood vessel.

We are too apt to affirm that there is no current or movement where we are unable to detect one by our senses.

The *rate* of the current of the circulation has been much studied and variously estimated, as a whole and in its parts.

The force that maintains the circulation of the blood, has been estimated from a few ounces to many tons. There could be no better evidence that it was not yet understood. The rate is now pretty well settled to be, for the large or main artery, twelve inches in a second of time; for the capillaries, one-third of an inch in one second, and for the venæ cavæ, eight inches in a second. The text-books of Physiology (Dalton's very latest included), give three sources to the force that operates the blood circuit, viz: First, the *systole of the heart;* Second, *contraction of the muscles* through or among which the vessels run; and third, *aspiration* of the lungs in breathing.

Does this account explain the difference of rate in the different portions of the blood-circuit? How can we accept this as satisfactory solution of the increase from one-thirty-sixth of the arterial rate (nearly a static condition) to two-thirds of the rate at its maximum of rapidity in the aortic current?

How can authors be satisfied to palm off such efforts for demonstration?

What then does this accelerate the venous current in the venæ cavæ? Simply the aspiration of the so-called motionless top or auricular portion of the right heart.

Here, as everywhere else, the truth is near to those willing to accept it, in the docility of a truly humble search for her fair proportions.

There are essential and accessory conditions that conspire to modify the nutritional changes which limit healthy and unhealthy manifestations.

The tripod of Bichat, viz: ("Respiration, innervation and circulation,") is essential to existence. That these may be continued, we must have added to the tripod, this "digestory" apparatus to complete "blood-making" or "pabulum-forming" machinery as pre-requisite and essential. And next in importance we must have the five senses, and the accessory of a locomotive aparatus, and a language by which our wants may be made known.

Race, sex, temperament and hereditary or acquired idiosyncrasy, may now properly occupy our attention, as modifying conditions whereby the individual is assured of health, or made liable to disease.

The next indispensable is a temperature at which the juices of the body may be maintained in their normal fluidity and consistence to permit the intercurrental circuits to freely move in the joyous dance of a spontaneous physiological behest.

This range of temperature is found to be between 95° and 105° F., or 37° to 40° C. This temperature becomes the governing element in the tenuity or the viscidity of the fluids that the currents distribute to the various nutrient territories.

Curdling or coagulation of the albumenosis lays the foundation of tumors and abscesses. All abscesses are tumors, but all tumors are not necessarially abscesses, until their interiors become dissolved and fluidified by retrogressive metamorphosis. Evacuation by absorption, or direct opening, is the cure for abscesses.

Starvation (by cutting off the supply of fabulum) or exterpation, is the cure for tumors.

For bony abscesses and tumors, the same rules hold good, viz: for caries and necrosis, extirpation is the only sure means of radical cure. Mechanical removal with suitable means, of all the sick and dead territories, is most direct and commendable method.

Solution of the dead and dying parts by Sulphuric or other acid, solvent, will do the work, but less rapidly and less definitely.

The Dr. was awarded a vote of thanks for his able paper.

Dr. Bonwell gave a description of his electric mallet, and also his method of pivoting teeth when the crowns are gone. To the margin of the gums he prepares the root, inserts a platina pin of the proper height to articulate correctly with the antagonizing tooth; a thread is cut on the end with a movable nut, the root is filled with amalgam; when hardened, he adjusts an artificial mineral crown, a hole running through the centre depressed at the surface to fit the nut at the end of the platina pin, the nut is screwed down, and the result is a well-fastened tooth capable of bearing great strain.

Adjourned.

Session called to order at 2 P. M. by the President. Oscar Peck then read his paper on "Oral Anatomy."

Oral Anatomy.

BY OSCAR PECK.

Man loves to dwell upon and appreciates the beautiful, especially as he advances in civilization. It is one of the necessary results of progression. The more nature is studied

the greater the beauty unfolded. Our grandest successes come from the closest imitation of primeval nature; in fact, we can have no success except as we are imitators of Divine work.

We are called the lords of creation: certain it is we are at the head of creation, and there is nothing made more perfect than man. As a consequence, nothing will give us more comprehensive ideas of the beautiful, impressing with the wonderful power and intricate construction, yet simple workings of the Master Hand, than the study of human anatomy. In its study we find that there is no single part or division of it presenting broader fields of investigation, more that is wonderful and intricate, and where the seeking progressive student of anatomy will find more congenial fields of labor than in that of Oral Anatomy.

Perhaps, there is no other single division where importance centres to a greater extent than in the mouth and surrounding parts. Here, principally, are the fountain sources of the different senses on which our happiness depends. Even from a most superficial view we cannot help being struck with the wonderful construction of this special part of anatomy. From the first steps of our study, the interest constantly increases, until we are lost in wonder and amazement at the wisdom and forethought beyond our comprehension. We naturally, first, familiarize ourselves with the exterior, noting the workings of the muscles, how they voluntarily and involuntarily perform their duties, subject to direct and reflex influences; attached to the bone in such a strong and striking manner, not only serving as a protection, but rounding off and making beautiful their rugged surface, presenting an exterior in which all the beauties and passions of the human mind are manifested. Examining still further, we find the different tissues blending into different organs as nature requires, each performing its respective functions, dependent, yet independent of the other, and, on closer examination, how it is all ramified, permeated and surrounded with a strange, complex and almost incomprehensible net work of veins, arteries, nerves, membranes, etc., this all resting upon a framework strong and endurable, presenting as many peculiarities, and opening as wide and fruitful a field of investigation, as presented by any other part of the system.

Thus, the more we examine, the greater our interest becomes, and at last when we take up the microscope and find a new world, as it were, unfolded to our view, beauties, minuteness, and intricacies of construction hardly imaginable, it comes

home to us with renewed force, that "man is fearfully and wonderfully made."

As dentists we are particularly interested in Oral Anatomy, especially when we set up the claim that to our lot falls the province of oral surgery. Having our attention called constantly to this part of the body, and our thoughts engaged for its welfare, (and in this progressive age of advancement, when the inclination of man is continually on the aggressive,) it is no matter of wonder that, as dentists, commencing with the welfare of the teeth, we should go still further and claim as our proper field of operation the whole province of oral anatomy. Yet the tendency of the age is, that men in their operations shall become specialists. I believe this tendency is well. A man having a broad comprehensive view of life, and realizing the necessary attainments for success, yet directing his mind as a specialist to a certain sphere of operation, will be more sure of success than he that undertakes too much.

To many, especially in the larger cities, opportunities are constantly presenting themselves to put into practice and display their ability in oral surgery, while in smaller places these opportunities are rare. Allowing this to be the case, and confining ourselves to the care of the teeth, we find a field of usefulness opening to our energies, commanding our best abilities, requiring the deepest research, and the most extensive learning, and one that will be remunertive, to the investigating student, as any that may be chosen. Perhaps there is nothing that will add more to the personal appearance and be a greater source of satisfaction, than a fine, strong, well-shaped set of teeth. This fact is apparent to all, but when, as dentists, we begin to examine the teeth, and see their great importance in the human economy, the vast amount of work required of them, their susceptibility to thermal changes and sympathy with the varying condition of the body, as manifested in their healthy or unhealthy state, impresses us with the importance of our calling.

There is no more wonderfully constructed organ of the body than the teeth. We find it composed of enamel, dentine, cementum, and a pulp. The enamel is analogous to the epithelium; the dentine to some other sub-mucous membrane. This all is ramified by exceedingly small dentinal canals, radiating from the centre of the tooth. Each canal is occupied by a "soft fibril which is continuous with the odontoblastic cells resting upon the surfaces of the pulp." There are special walls to protect this fibril called sheathes. Only after long continued

and well directed study can one appreciate the wonderful mechanism of the human teeth, realize the importance of their peculiar duties, and comprehend the delicacy and strength of their construction. They require for their preservation, the highest order of skill and manipulation, and the dire results occurring from misdirected efforts not only to the teeth but the entire system, only after long continued, well directed, persevering study of the whole province of anatomy, especially that of Oral Anatomy.

Dr. Atkinson spoke at some length in his usually happy style, regretting the essayist had not gone further in detail of the subject.

The following were elected officers for the ensuing year: E. F. Hanks, President, Chas. Dippolt, Vice-President. Chas. A. Meeker was re-elected Secretary. He thanked the Society for the renewed expressions of confidence exhibited by his re-election. He appreciated the trust imposed, and would try and merit the same. Dr. W. H. Dibble was elected Treasurer, Jas. W. Clark, Chas. Hubbard, C. S. Stockton, A. A. Pierce and D. H. Thickstun, Executive Committee. J. Hayhurst, Geo. C. Brown, C. W. Meloney, J. W. Cosad and F. C. Barlow, Examiners.

Long Branch was selected as next place of annual meeting. Ten dollars was donated for the use of the church.

The Secretary, J. W. Clark and C. S. Stockton were made a committee to print proceedings of Society for 1875–6–7.

C. S. Stockton and J. Hayhurst were appointed a committee to solicit subscriptions for printing the same.

F. T. Eggert, D. C. McNaughton and J. Chadsey, were elected delegates to the "American Dental Association," held May 7th, 1878.

J. K. Goble and J. W. Cosad were elected delegates to the New York State Society.

C. W. Meloney and L. H. De Lange were elected delegates to the Pennsylvania State Society.

Adjourned.

FRIDAY, JULY 20TH.

Session called to order at 10 A. M. President in the chair.

A vote of thanks was extended to the Messrs. Lelands, of the Ocean House, for their uniform kindness and courtesies extended to the members of the Society.

In incidents of office practice, C. S. Stockton gave a description of a tooth, in one root of which the pulp was alive and in the other dead and discharging. He capped the one, and treated and filled the other, and the tooth was doing good service.

Dr. Atkinson spoke of the good effects of creosote and oxide of zinc in capping exposed pulps.

Dr. Bonwill reported the case of death, in his own mouth, of the nerve, in two roots, of a superior molar, and the other alive.

E. F. Hanks gave a description of his taking small and difficult impressions, by using napkins instead of cups: holding the napkins in the fingers, the fibres of the linen absorbing the moisture.

The President showed a sample of white nainsook which he used in preference to other substances in drying cavities, and advised a trial by the members. Dr. Bonwill advocated the use of cotton yarn, boiled.

Dr. Atkinson gave a description of Dr. Farrar's alveolar abscess syringe.

E. F. Hanks gave a description of a little appliance for using oxy-chloride.

J. Hayhurst, Chairman of Examining Board, reported the following gentlemen as passing satisfactory examinations: A. M. Hedges, Marvin H. Carpenter, G. W. Carman, J. F. Lummis, H. W. Schrieber, B. L. Rex.

The newly-elected President was inducted in office by C. S. Stockton. The retiring President, Dr. Welch, welcomed him and hoped he would have a successful career. President Hanks made a neat and appropriate speech, thanking the Society for the honor conferred. He said that he would fill the office to the best of his ability, and asked for the co-operation of the members in the discharge of his duty. A vote of thanks was awarded to the retiring President.

Charles Hubbard read his paper on Anatomy.

Anatomy.

BY CHARLES HUBBARD.

Anatomy: The word anatomy properly signifies dissection, but it has been appropriated to the study and knowledge of the number, shape, situation, structure, and connection—in a

word, of all the apparent propensities of organized bodies. Anatomy is the science of organization. Some have given the term a still more extended acceptation, applying it to every mechanical decomposition, even of inorganic bodies. Thus crystallography has been termed the anatomy of crystallized minerals. It assumes different names, according as the study is confined to one organized being or class of beings. Anatomy is a large subject to write about, and therefore you will not expect me to give you anything original, for there is not much written but what is borrowed from other authors, to give facts and correct ideas.

Though experience is what we may call or term the immediate foundation of natural knowledge, yet with respect to particular persons, its influence is very narrow and confined. The bodies that surround us are numerous. Many of them lie at a great distance, and some quite beyond our reach. Life, too, is short, and so crowded with cares, that but little time is left for any single man to employ himself in unfolding the mysteries of nature. Hence it is necessary to admit many things upon the testimony of others, which by this means becomes the foundation of a great part of our knowledge of the body. No man doubts the power of "aqua regia" to dissolve gold, though perhaps he never himself made the experiment. In these, therefore, and such like cases, we judge of the facts and operations of nature upon the mere ground of testimony. However, as we can always have recourse to experience where any doubt or scruple arises, this is justly considered as the true foundation of natural philosophy, being, indeed, the ultimate support upon which our assent rests, and whereto we appeal when the highest degree of evidence is required. And there are many facts that will not allow of an appeal to the senses, and in this case, testimony is the true and only foundation of our judgments.

The present ignorance of society in regard to anatomy, physiology, and the laws of health, is truly appalling. The clergy, who are so advanced in general culture, and who should be the teachers of hygiene as a part of morality, *are, as a profession*, utterly in the dark in regard to the simplest laws of life and health. Theologians and professors, presidents of colleges, and pulpit orators, who have learned all important languages, living and dead, who can repeat the names (at call) of all the imbecile and insane kings of Europe, and the date of their administrations, do not even suspect the nature of the processes of respiration or of digestion, every movement going

on in their own bodies, and even give no reason for the faith that is in them, that the brain rather than the liver is the organ of the mind.

Men who plan great inventions, and understand all the machinery of man's devising, know nothing of the most wonderful machine of all—the human body. If our teachers, and the teachers of our teachers, know little or nothing of themselves, what shall we say of the great masses of the people. The profession must exert its influence to introduce the systematic study of hygienic science in all of our colleges and institutions of learning. "That we may understand for what purpose the human body is made to consist of such a variety of parts; why it possesses such a complication of nice and tender machinery, and why there was not a more simple, less delicate and less expensive frame, it is necessary that we, in our imagination, make a man, or let us suppose that the mind or immaterial part is to be placed in a corporeal fabric, in order to hold intercourse with other material beings by the intervention of the body; and then consider what will be wanted for its accommodation. In this inquiry we shall plainly see the necessity, the advantage and wonderful adaptation of most of the parts which we actually find in the human body; and if we consider that in order to answer some of the requisites, human wit and invention would be very insufficient, we need not be surprised if we meet with some parts of the body whose use we cannot yet perceive, and with some operations and functions we cannot explain; but we can see that the whole bears the most striking tokens of excelling wisdom and ingenuity, but the imperfect senses and capacity of man cannot reach every part of a machine, which nothing less than the intelligence and power of the Supreme Being could contrive and execute.

First, then, the mind, the thinking, immaterial agent, which shall have all the requisites for the union of spirit and body; accordingly it is provided with the brain, and is commander in chief of the whole fabric. As it is to hold a correspondence with all material external beings, it must be supplied with organs of sense, as we call them. The eye is adapted to light, the ear to sound, the nose to smell, the mouth to taste, and the skin to touch. It must be furnished with organs of communications between itself in the brain and those organs of sense, to receive *information of all the impressions* that are made upon them; and it must also have organs between itself in the brain and every other part of the body, fitted to convey

its commands and to influence the whole; for these purposes the nerves are given. They are soft, white cords which rise from the brain, the immediate residence of the mind, and disperse themselves in branches through all parts of the body. They convey all the different kinds of sensations to the mind in the brain, and likewise carry out all its commands to the other parts of the body. They are intended to be occasional monitors against all such impressions as endanger the well being of the whole, or of any particular part; which vindicates the Creator of all things in having subjected us to those many disagreeable and painful sensations to which we are exposed from many accidents in life. Moreover, the mind, in this corporal system, must be endowed with the power of moving from place to place, for the sake of intercourse with a variety of objects, or escape from such as are dangerous, disagreeable or hurtful, and for the pursuit of such as are pleasant or useful. Accordingly it is furnished with limbs, muscles and tendons, (the instruments of motion,) which are found in every part of the fabric where motion is necessary; to support, to give firmness and shape to the body; to keep the softer parts in their proper places, to give fixed points for, and the proper direction to, its motions, as well as to protect some of the more important and tender organs from external injuries, there must be some firm prop-work interwoven through the whole. And in fact, for such work the bones are given. This prop-work is not made of one continuous bony structure, for that would prevent motion, therefore there are a number of bones. These pieces must all be firmly bound together to prevent their dislocation, and this end is perfectly answered by ligaments. The extremeties of these bony pieces, where they move and rub upon one another, must have smooth and slippery surfaces for easy motion. This is most happily provided for by cartilages and mucus of the joints. The spaces between these different organs must be filled up with some soft, ductile matter, which shall keep them in their places, unite them, and at the same time allow them to move a little upon one another. These purposes are answered by the cellular membranes or fatty substance. There must be an outward covering over the whole apparatus, to give it compactness, and to defend it from a thousand injuries, which in fact are the very purposes of the skin and other integuments.

The mind being formed for society and intercourse with beings of its own kind, must be endowed with powers of expressing and communicating its thoughts by some sensible

marks or signs, which shall be, both easy to itself, and admit of great variety. Accordingly it is provided with the organs and faculty of speech, by which it can throw out signs with amazing facility, and vary them without end.

Thus, having built up an animal body, it would seem to be very complete; but as it is the nature of matter to be changed and worked upon by matter, so in a very little time such a living creature must be destroyed, if there is no provision for repairing the injuries which it must commit upon itself, and those to which it must be exposed from without; therefore a treasure of blood is actually provided in the heart and vascular system, full of nutritious and healing particles, fluid enough to penetrate into the minutest parts of the animal; impelled by the heart, and conveyed by the arteries, it washes every part, builds up what was broken down, and sweeps away the old and useless materials; therefore the necessity or advantage of the heart and arterial system. The old materials which have become useless, and are swept off by the current of blood, must be separated and thrown out of the system; therefore glands, the organs of secretion, are given for straining whatever is redundant, vapid or noxious from the mass of blood, and when strained they are thrown out by emunctories, called organs of excretion. As the machine is constantly in motion, the repairing of it must be carried on without intermission, and the strainers must always be employed. Therefore there is actually a perpetual circulation of the blood, and the secretions are always going on. All this provision, however, would not be sufficient, for that store of blood would soon be consumed and the fabric would break down, if there was not a provision made for fresh supplies. These are scattered in abundance around us, in the animal and vegetable kingdoms; and our hands, the best contrived instruments, are furnished for gathering them, and for preparing them in various ways for the mouth. But these supplies, which we call food, must be considerably changed—they must be converted into blood; and for that purpose we are provided with teeth for cutting and bruising the food, and a stomach for melting it down, in short, all the organs subservient to digestion. The finer parts of the aliments only can be useful in the constitution, these must be taken up and conveyed into the blood, and the dregs must be thrown off, and the intestinal canal is provided for that purpose; it separates the nutritious part, which we call chyle, to be conveyed into the blood by the system of absorbent vessels, and the coarser parts pass downwards to be ejected.

The animal body is not only furnished with what is wanting for its immediate existence, but also with powers of protracting that existence to an indefinite length of time; but its duration must necessarily be limited, for as it is nourished, grows, and is raised up to its full strength and perfection, so it must in time, with all natural beings, begin to decay, and hurry on to final ruin. Therefore we see a provision made for its renovation: accordingly, wise Providence, to perpetuate as well as to preserve his work, besides giving a strong appetite for life and self-preservation, has made animals male and female, to continue the propagation of the species to the end of time. Thus we see, that by the very imperfect survey which human reason is able to take of this subject, the animal man must necessarily be complex in his corporeal system and its operations. He must have one great and general system, the vascular branching through the whole for circulation; the nervous, with its appendages; the organs of sense, for every kind of feeling, and a third for the union and connection of all these parts. Besides these primary and general systems, he requires others which may be more local and confined. One for strength, support and protection, the bony structure; another for the requisite motions of the parts among themselves, as well as for moving from place to place, the muscular system; another to prepare nourishment for the daily recruit of the body, the digestive organs, and one for the continuance of the species.

Breathing (it would seem at first difficult to account for)—we only know it from observation, to be essential to life. Notwithstanding this, when we see all the other parts of the body, and their functions—so well accommodated for, and so wisely adapted to their several purposes, there can be no doubt that respiration is so likewise. Accordingly, the discoveries of Dr. Priestly and Dalton and others, have thrown light upon this function. It commences at birth, and continues through life. It is performed in the following manner (as quoted from Dr. Beard): "The diaphragm, dividing the chest from the abdomen, is strong and muscular, and can act with great power in enlarging the chest. It is convex towards the lungs, and concave below. When it contracts, its surface becomes nearly flat, and of course the chest is deepened. At the same time, the intercostial muscles contract, and raise the lower ribs, which are movable towards the upper, which are more fixed. When the ribs are raised, they are so contrived as to be drawn outwards, and the cavity of the chest is dilated laterally.

Thus, we see that when we inspire, the chest is enlarged in all directions, the lungs are suspended in the cavity, and follow all the motions of the parts which enclose them; for when the pressure of the ribs is removed, the air they contain expands by its elasticity, and the external air rushes in, to restore the balance. The lungs, now in a state of inspiration, are emptied by the following process: When the diaphragm contracts, it would lessen the abdominal cavity as much as it enlarges that of the chest,—if its loose enclosures did not give way by protruding,—this protrusion of the belly excites the abdominal muscles to react. Their contraction pushes up the now relaxed diaphragm into the chest, and as they are attached to the lower edges of the ribs, they pull them down with great power, and thus lessen the cavity of the chest. The lungs are compressed, and the air just received is now expelled." It is pleasing and instructive to observe this admirable alternation of motion, by which the mechanism of respiration is effected. The diaphragm and intercostal muscles co-operate in enlarging the chest. They contract, and are relaxed in the same instant, while the abdominal muscles sieze, as it were, the moment of their relaxation to counteract their motion, and to diminish the size of the chest.

Of all the different systems in the human body, the use and necessity are not more apparent than the wisdom and contrivance which have been exerted in putting them all into the most compact and convenient form; in disposing them so that they shall receive aid from one another, and that all or many of the parts shall not only answer their principle end or purpose, but operate successfully and usefully in a variety of secondary ways.

If we consider the whole animal structure in this light, and compare it with any machine in which human art has exerted its utmost skill, we shall be convinced beyond the possibility of doubt, that intelligence and power have exerted in its formation, far surpassing anything of which man can boast. The superiority in the animal economy is peculiarly wonderful. In machines of our own contrivances, there is no internal power; no principle in the machine itself, by which it may suffer, or remedy any mischief which admits of repair. But, in the animal body, this is most wonderfully provided for by the internal powers of the system. A wound heals by a natural process. A broken bone is made firm again by a deposit of new bony matter; a dead part is separated and thrown off; noxious juices are driven out by some of the emunctories; a

redundancy is removed by some spontaneous bleeding; a bleeding naturally stops of itself; a great loss of blood, from any cause, is, in some measure, compensated by a contracting power in the vascular system, which accommodates the capacity of the vessels, to the quantity contained. The stomach gives information when the supplies are exhausted.

And for the protection of the animal body, amidst the variation in the heat of external bodies, a power of generating warmth has been provided; and to prevent its undue accumulation in a heated atmosphere, or its excessive loss in a cold one, the quantity carried away is regulated with wonderful nicety to its wants. So that an equal temperature is preserved in all climates, from the extreme cold in the north, to the intense heat in the equatorial regions (where it is habitable). Still more wonderful and astonishing, and more beyond human comprehension than that of which I have written, is the capability individuals possess of reproducing beings like themselves, which are again endued with similar power for producing others, and so multiplying the species without end. These are powers which mock all human invention or imitation. They are characteristics of the Divine Architect.

There are reasons why every one should make it a pleasure and a duty to become acquainted with some of the general facts in regard to the structure and functions of the human system, as well as preserving health, and checking or modifying disease. Because the human body is the greatest wonder of creation. Nothing that man can devise, and nothing else that God has created, is worthy to be compared with the complex wonderful machine which we call man. A distinguished theologian truly and eloquently says: "Men will cross the ocean to see a mountain or a waterfall, but there is more of grandeur in the human spirit, than in all material nature." Our children should be instructed in the interesting and important departments of physiology and hygiene, not only at school, but at home (in the family circle). By the aid of maps, charts, pictures, attractive books, and kindly care on the part of instructors. The commandments of physiology and hygiene should be taught diligently unto our children. "Line upon line, precept upon precept, here a little and there a little, in the house and by the way, at their lying down and their rising up." And in time of need, they will both remember and appreciate its value in after years. And they will remember it when they rise to positions of responsibility and posts of honor, and will guide their judgment and inspire their lives,

by its teachings. They will remember it in the hour of temptation, and will derive therefrom, wisdom to direct and strength to resist the force of mastering passions. They will remember it in the time of darkness and sorrow, and will rejoice in the light of its truths, and find the rarest of consolation in the activity of its pursuits. They will remember it when they themselves are parents, and, in turn, will teach it to their children, and they again to their children's children, unto the remotest generations.

G. C. Brown gave a description of a severe and protracted hemorrhage from the gum, near the condyles, where there was no tooth. The outlet seemed no larger than a pin-hole, and no cause could be assigned for the flow. It was controlled, after alarming symptoms had shown themselves, by the aid of compress.

A. W. Kingsley gave a description of a similar case, from the extraction of a root.

B. L. Rex was elected a member.

Motion made and carried that the Secretary and Committee on the Preparation of the Papers for Printing, have power to abbreviate and condense the same as much as possible.

The Session then adjourned, *sine die.*

C. S. STOCKTON, }
J. W. CLARK, } *Committee.*

CHAS. A. MEEKER,
Secretary.

State of New Jersey, }
County of } *ss.*

of the of , in the County of and State aforesaid, upon his oath, complains, that of the of , in the County of , and State aforesaid, not being a regular licensed Physician or Surgeon, heretofore, to wit, on the day of in the year Eighteen Hundred and Seventy otherwise than by Extracting Teeth, practiced Dentistry in the State of New Jersey, to wit, in the of aforesaid, for fee and reward, in violation of, and contrary to, the provisions of the Act entitled, "An Act to regulate the practice of Dentistry, and to protect the people against Empiricism in relation thereto in the State of New Jersey," approved March 14, *A. D.* 1873; *Therefore he prays, that the said may be apprehended and held to answer to said complaint, and dealt with as law and justice may require.*

Sworn and subscribed this
day of *A. D.* 187
before me
Justice of the Peace.

COURSE OF STUDY

FROM THE

BOARD OF EXAMINERS

OF THE

New Jersey State Dental Society

THE CANDIDATE SHOULD HAVE A GENERAL KNOWLEDGE OF THE SUBJECTS NAMED.

MECHANICAL DENTISTRY.—Richardson's Mechanical Dentistry.

DENTAL PATHOLOGY AND THERAPEUTICS.—Biddle's Materia Medica.

FLINT'S PRACTICE OF MEDICINE.—Garretson's Diseases of the Mouth and Surgery of the Jaws.

CHEMISTRY.—Fowne's Elements of Chemistry.

OPERATIVE DENTISTRY.—Harris' Principal and Practice.

ANATOMY AND SURGERY.—(Gray's,) Heath on the Injuries and Diseases of the Jaws.

NEW JERSEY STATE DENTAL SOCIETY,

INCORPORATED BY ACT OF LEGISLATURE, MARCH 14, 1873.

OFFICIAL NOTICE

TO CANDIDATES FOR EXAMINATION.

SECRETARY'S OFFICE,

N. J., 187

To Dr.

Dear Sir:

You are hereby requested to appear before the Board of Examiners to answer as to your qualifications to practice Dentistry in this State, on 187 *, in the City of* *No.* *street, at* *o'clock.*

You are summoned in conformity with an act entitled "An Act to Regulate the Practice of Dentistry, and to protect the people against empiricism in relation thereto, in the State of New Jersey.

Very respectfully yours,

Secretary.

AGATE CEMENT.

We are now ready to supply a Cement which we believe to be the best preparation yet placed before the Profession. It is the result of a very long series of experiments carried on for years, latterly under our observation, by Dr. Henry Weston.

This Cement does not owe his hardness to alum or its equivalent in any form, or to any component which is liable to be dissolved out in the fluids of the mouth.

It has been prepared in our own manufactory, every precaution having been observed to secure the best possible results. Like care will insure the same quality hereafter.

We claim that

The Agate Cement is superior to all others in Strength, Density, Freedom from liability to Flake or Disintegrate in the Mouth, and especially in its perfect uniformity.

It possesses also a certain putty-like quality, which renders it easier of manipulation than other Cements.

Its color is that which has been deemed applicable to the greatest variety of cases,—an intermediate between gray and yellow.

Put up in boxes containing ounce and half-ounce.

Full directions accompany each package.

PRICE PER OUNCE..... $4.00

" " HALF-OUNCE..... 2.00

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(Patented November 24th, 1874.)

After a long series of experiments, we now offer to the Profession a preparation of gutta-percha, in the form of pellets of various sizes, convenient for filling all descriptions of cavities in teeth. We believe this to be the best preparation of gutta-percha which has been produced.

For temporary fillings, for covering exposed pulps, for partially filling large cavities, or for the permanent filling of cavities with frail walls, it possesses admirable qualities.

It is exceedingly plastic, works exquisitely under the instrument without sticking, hardens quickly, and adheres well to the walls of the cavity.

It is tough, and does not crumble under exposure to the fluids of the mouth, or from attrition during mastication.

We confidently commend it as the best filling material of its kind in the market.

Put up in one ounce, half ounce, quarter ounce, two pennyweight, and one pennyweight boxes, in pellets of assorted sizes.

The Gutta-Percha Pellets are *the things* as dressings for tender cavities in teeth and for fillings in children's teeth when badly decayed. They are easy of insertion, free from the packers admirably, and fill a niche heretofore not occupied by anything we have used. My son Clinton and I are delighted with them.

W. H. ATKINSON, NEW YORK.

Since the death of Mr. Bevan, formerly of Boston, who was known as one of the most successful of all workers in "vulcanite," the dental profession have had much difficulty in procuring reliable plastic stoppings.

The material furnished by Mr. Bevan was remarkably tough and compact, a really wonderful substance, as every one who fairly tested it admitted.

Unfortunately the method of preparing it was a secret which he confided to no one, and was considered as one of the "lost arts." The "pellets of prepared gutta-percha," which I received from you several months ago give me great satisfaction, and seem to more closely resemble the original Bevan's Stopping than anything I have used.

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NEW YORK, N. Y.

Price per	ounce	$5.00
"	half-ounce	2.50
"	quarter-ounce	1.25
"	two dwts	50
„	one dwt	25

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Styles A., B. and C., all numbers.

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Thickness A. and B., six sizes.

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